FIG. 1

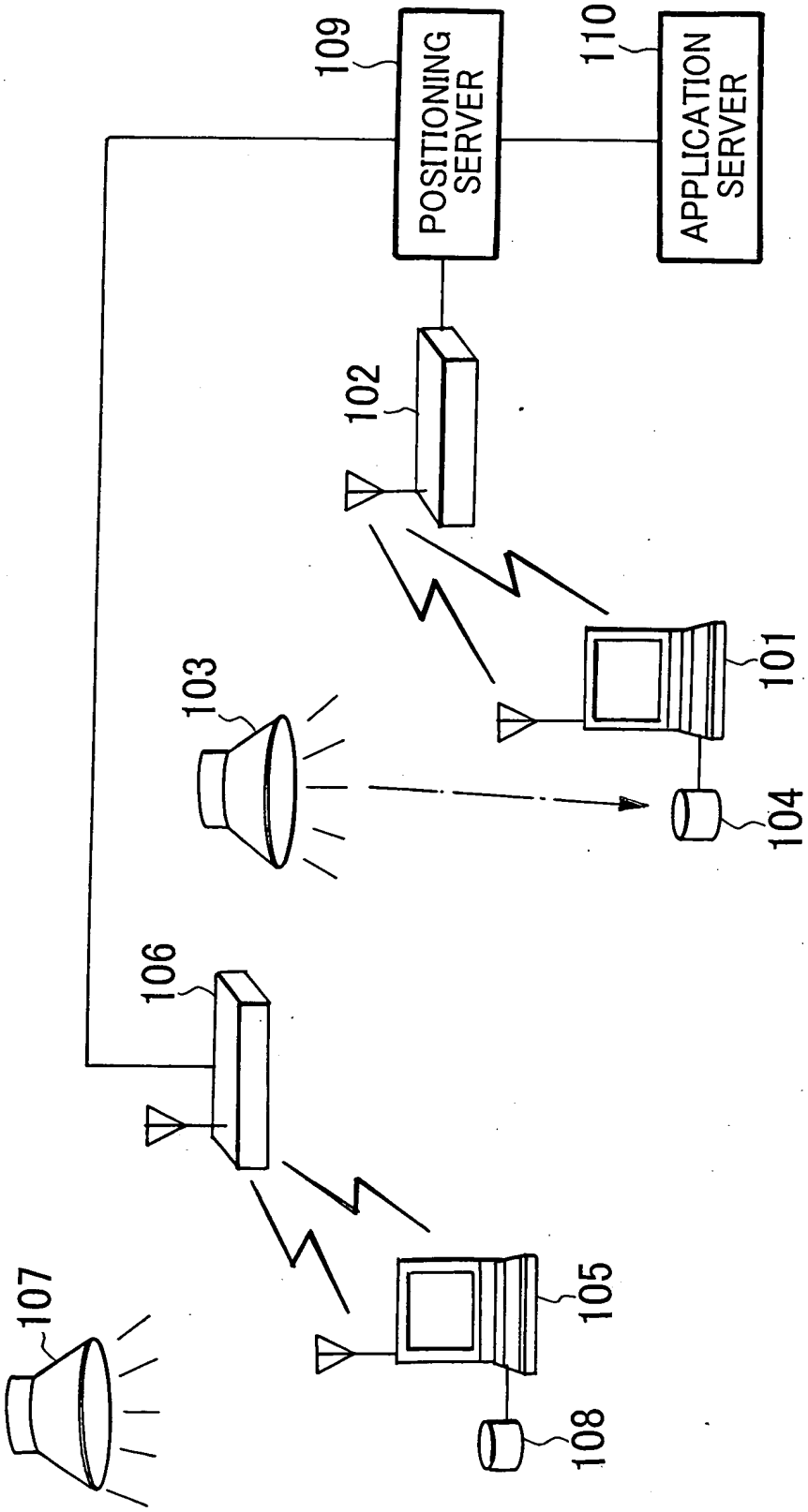

109
POSITIONING SERVER
110
APPLICATION SERVER
102
101
103
104
106
105
107
108

FIG.2

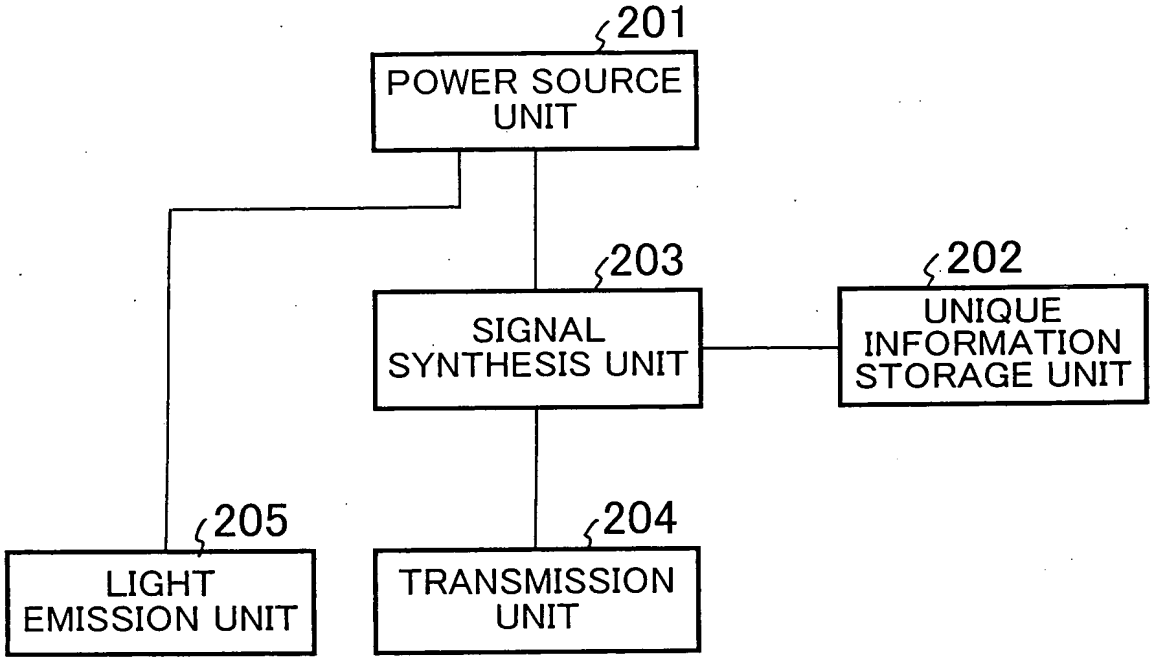


FIG.3

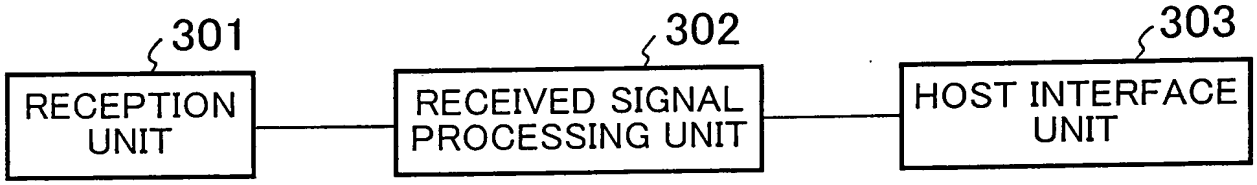


FIG.4

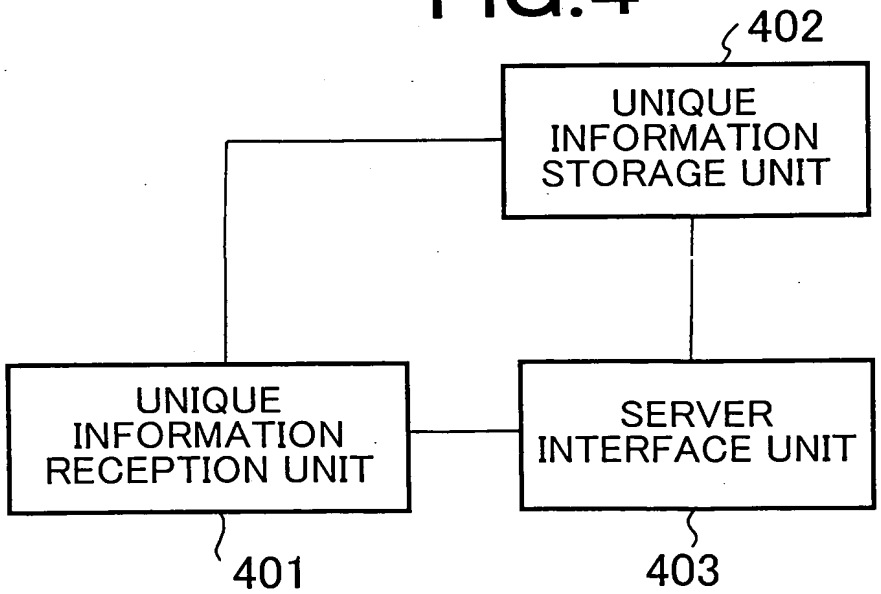


FIG.5

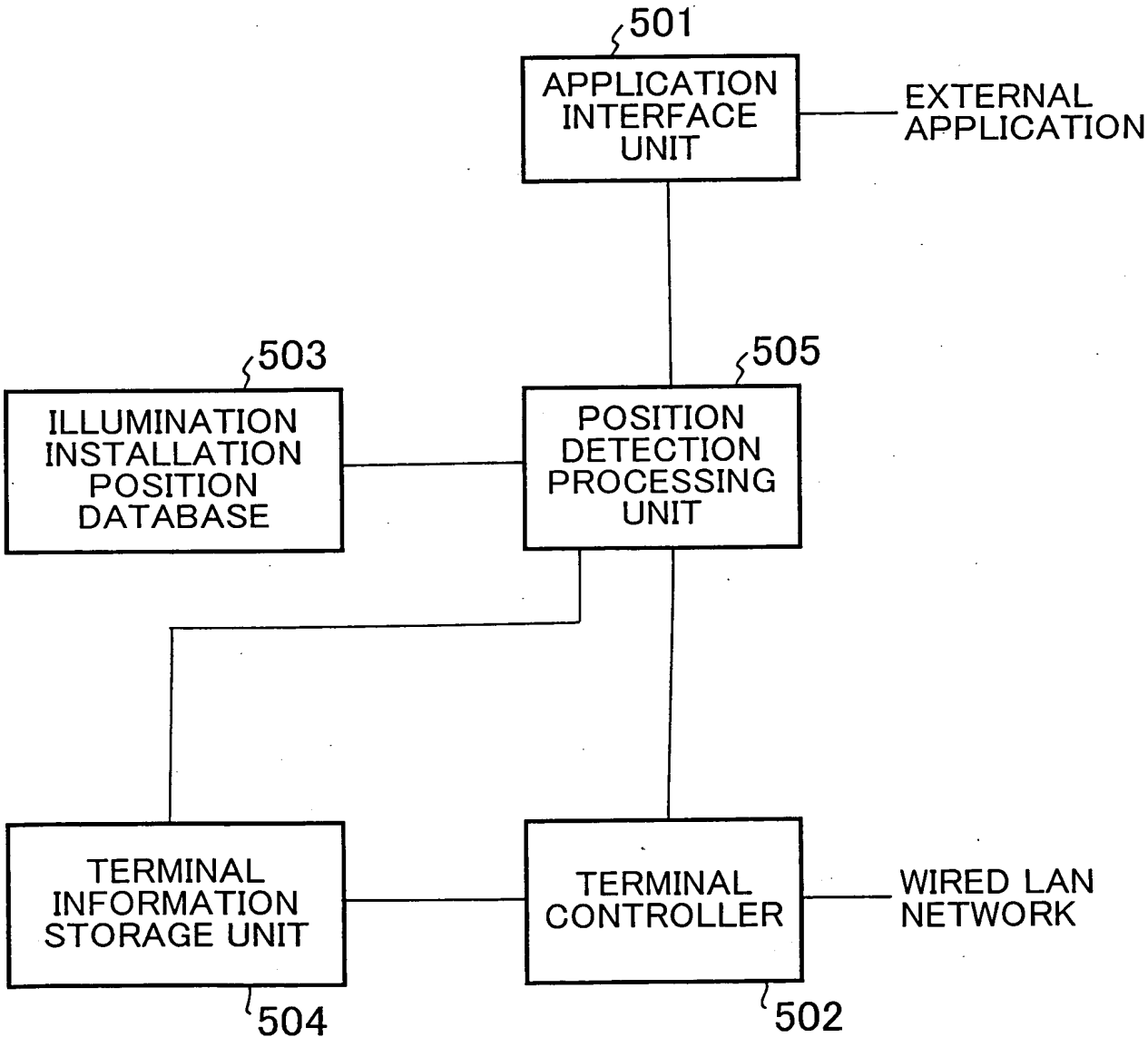

501
APPLICATION INTERFACE UNIT
EXTERNAL APPLICATION
503
ILLUMINATION INSTALLATION POSITION DATABASE
505
POSITION DETECTION PROCESSING UNIT
TERMINAL INFORMATION STORAGE UNIT
504
TERMINAL CONTROLLER
WIRED LAN NETWORK
502

FIG.6

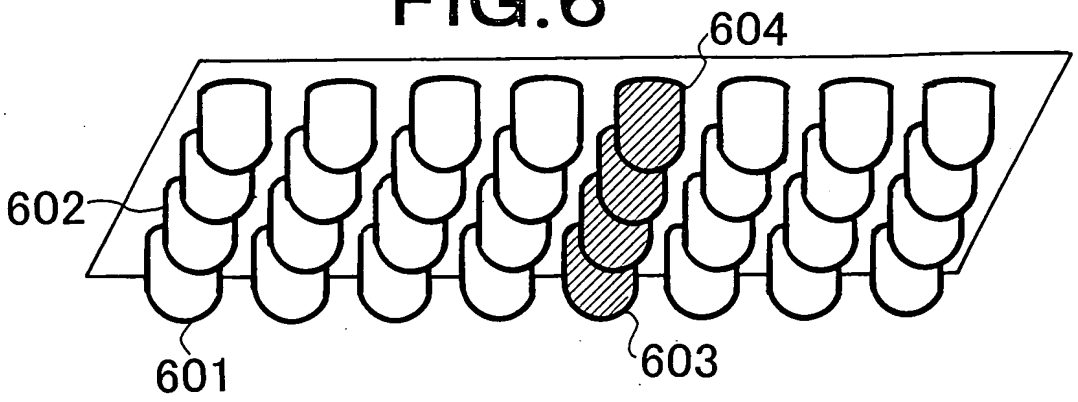


FIG.7

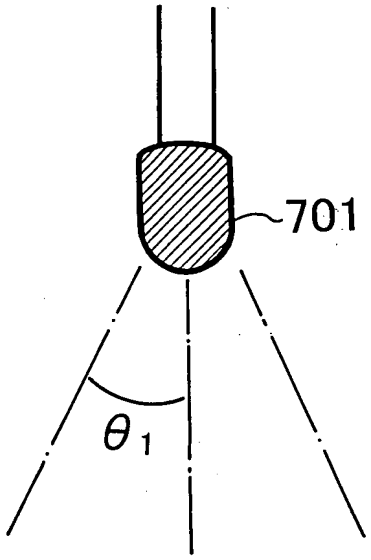


FIG.8

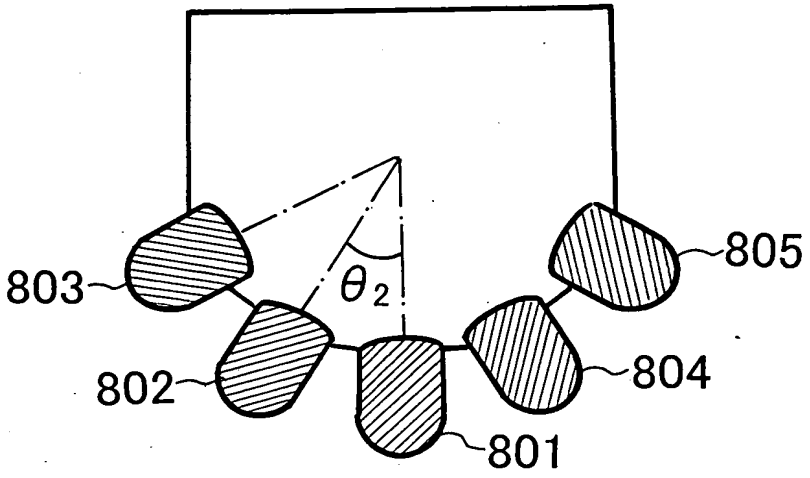


FIG.9

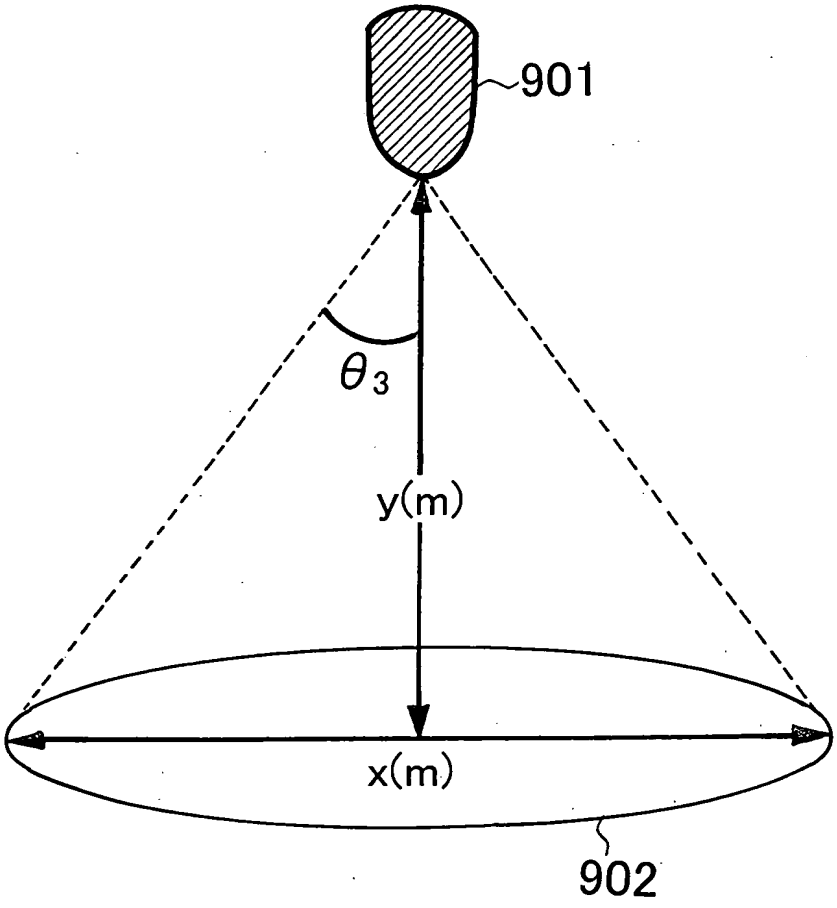


FIG.11

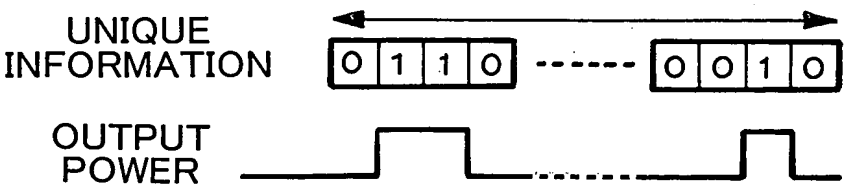


FIG.10

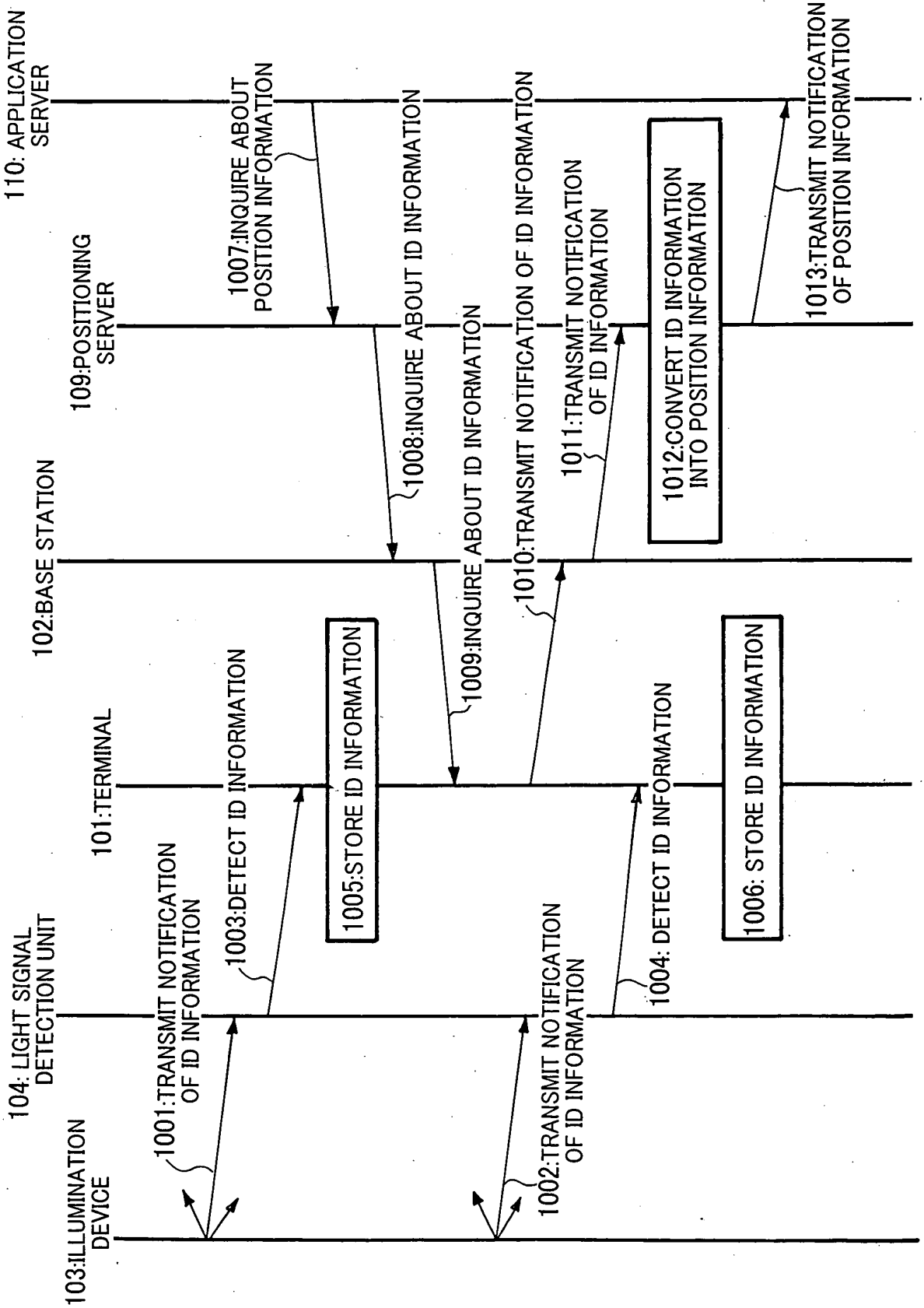

103:ILLUMINATION DEVICE
104: LIGHT SIGNAL DETECTION UNIT
101:TERMINAL
102:BASE STATION
109:POSITIONING SERVER
110: APPLICATION SERVER
1001:TRANSMIT NOTIFICATION OF ID INFORMATION
1002:TRANSMIT NOTIFICATION OF ID INFORMATION
1003:DETECT ID INFORMATION
1004: DETECT ID INFORMATION
1005:STORE ID INFORMATION
1006: STORE ID INFORMATION
1007:INQUIRE ABOUT POSITION INFORMATION
1008:INQUIRE ABOUT ID INFORMATION
1009:INQUIRE ABOUT ID INFORMATION
1010:TRANSMIT NOTIFICATION OF ID INFORMATION
1011:TRANSMIT NOTIFICATION OF ID INFORMATION
1012:CONVERT ID INFORMATION INTO POSITION INFORMATION
1013:TRANSMIT NOTIFICATION OF POSITION INFORMATION

FIG.12

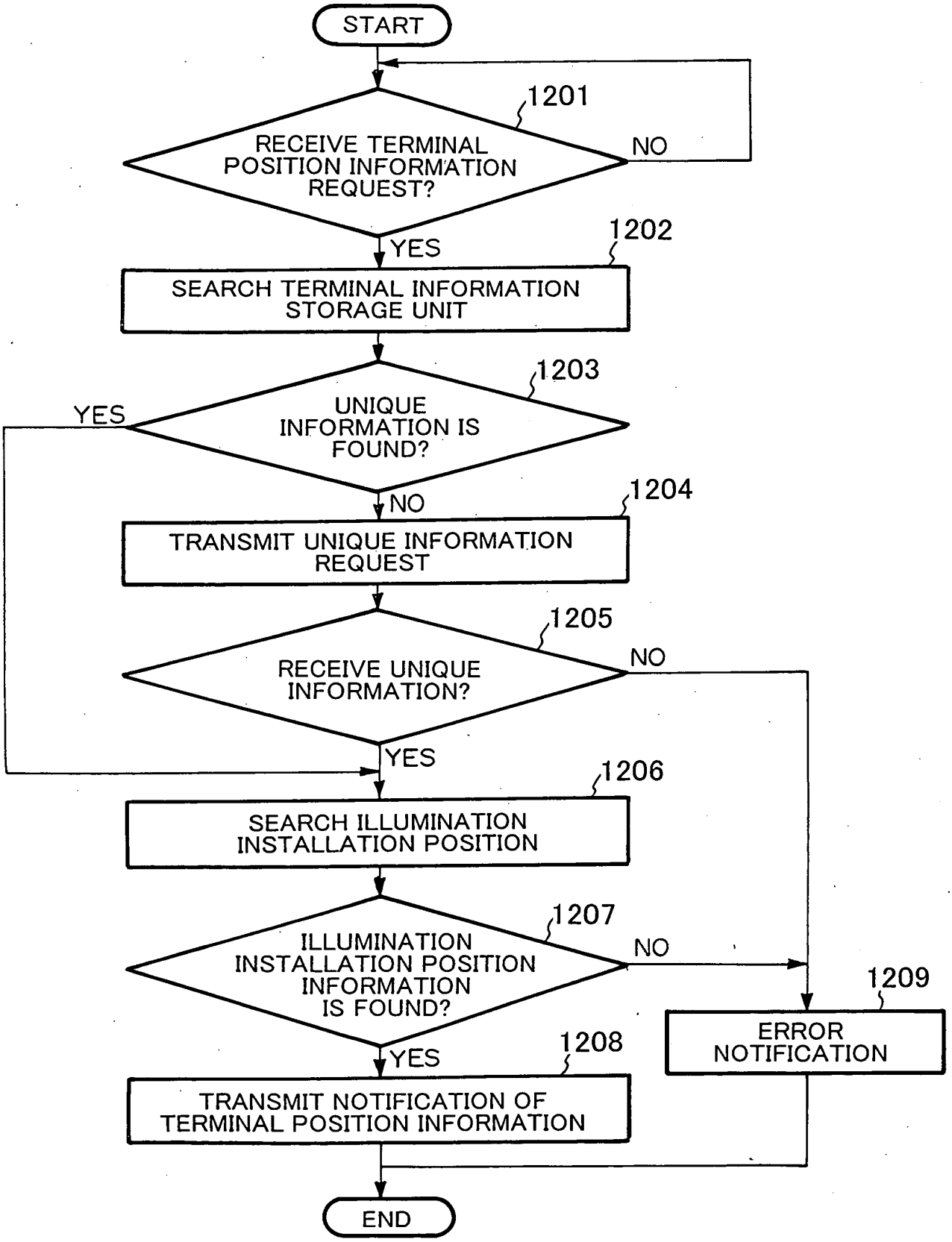

START
1201
RECEIVE TERMINAL POSITION INFORMATION REQUEST?
NO
YES
1202
SEARCH TERMINAL INFORMATION STORAGE UNIT
1203
UNIQUE INFORMATION IS FOUND?
YES
NO
1204
TRANSMIT UNIQUE INFORMATION REQUEST
1205
RECEIVE UNIQUE INFORMATION?
NO
YES
1206
SEARCH ILLUMINATION INSTALLATION POSITION
1207
ILLUMINATION INSTALLATION POSITION INFORMATION IS FOUND?
NO
YES
1208
TRANSMIT NOTIFICATION OF TERMINAL POSITION INFORMATION
1209
ERROR NOTIFICATION
END

FIG.13

1301 TERMINAL ID	1302 UNIQUE INFORMATION	1303 RECEPTION TIME
ID 1	ILLUMINATION ID 10	2003/10/01 15:10:53
ID 2	ILLUMINATION ID 06	2003/10/01 15:12:10
⋮	⋮	⋮

FIG.14

1401 UNIQUE INFORMATION	1402 LOGICAL INFORMATION	1403 COORDINATE INFORMATION	1404 AREA INFORMATION
ILLUMINATION ID 10	FIRST MEETING ROOM	X=10, Y=20, Z=2	10m
ILLUMINATION ID 06	LOBBY	X=20, Y=10, Z=1	5m
⋮	⋮	⋮	⋮

FIG.15

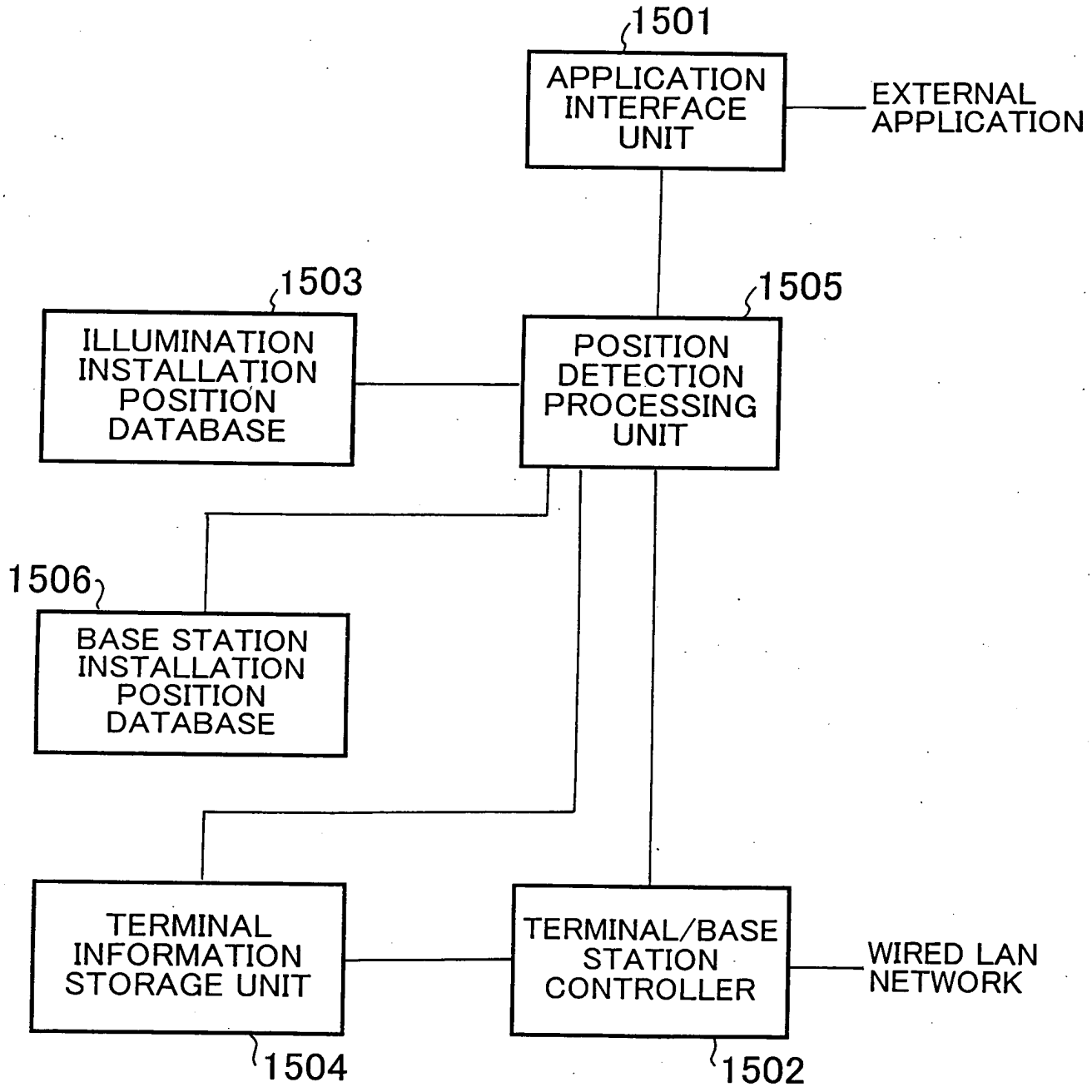

1501
APPLICATION INTERFACE UNIT
EXTERNAL APPLICATION
1503
ILLUMINATION INSTALLATION POSITION DATABASE
1505
POSITION DETECTION PROCESSING UNIT
1506
BASE STATION INSTALLATION POSITION DATABASE
TERMINAL INFORMATION STORAGE UNIT
1504
TERMINAL/BASE STATION CONTROLLER
WIRED LAN NETWORK
1502

FIG.16

1301 TERMINAL ID	1302 UNIQUE INFORMATION	1303 RECEPTION TIME	1601 BASE STATION ID	1602 CONNECTION TIME
ID 1	ILLUMINATION ID 10	2003/10/01 15:10:53	BASE STATION ID 10	2003/10/01 15:00:05
ID 2	ILLUMINATION ID 06	2003/10/01 15:12:10	BASE STATION ID 06	2003/10/01 15:02:20
⋮	⋮	⋮	⋮	⋮

FIG.17

1701 BASE STATION ID	1702 LOGICAL INFORMATION	1703 COORDINATE INFORMATION	1704 AREA INFORMATION
BASE STATION ID 10	FIRST MEETING ROOM	X=12, Y=22, Z=2	30m
BASE STATION ID 06	LOBBY	X=22, Y=11, Z=1	25m
⋮	⋮	⋮	⋮

FIG.18

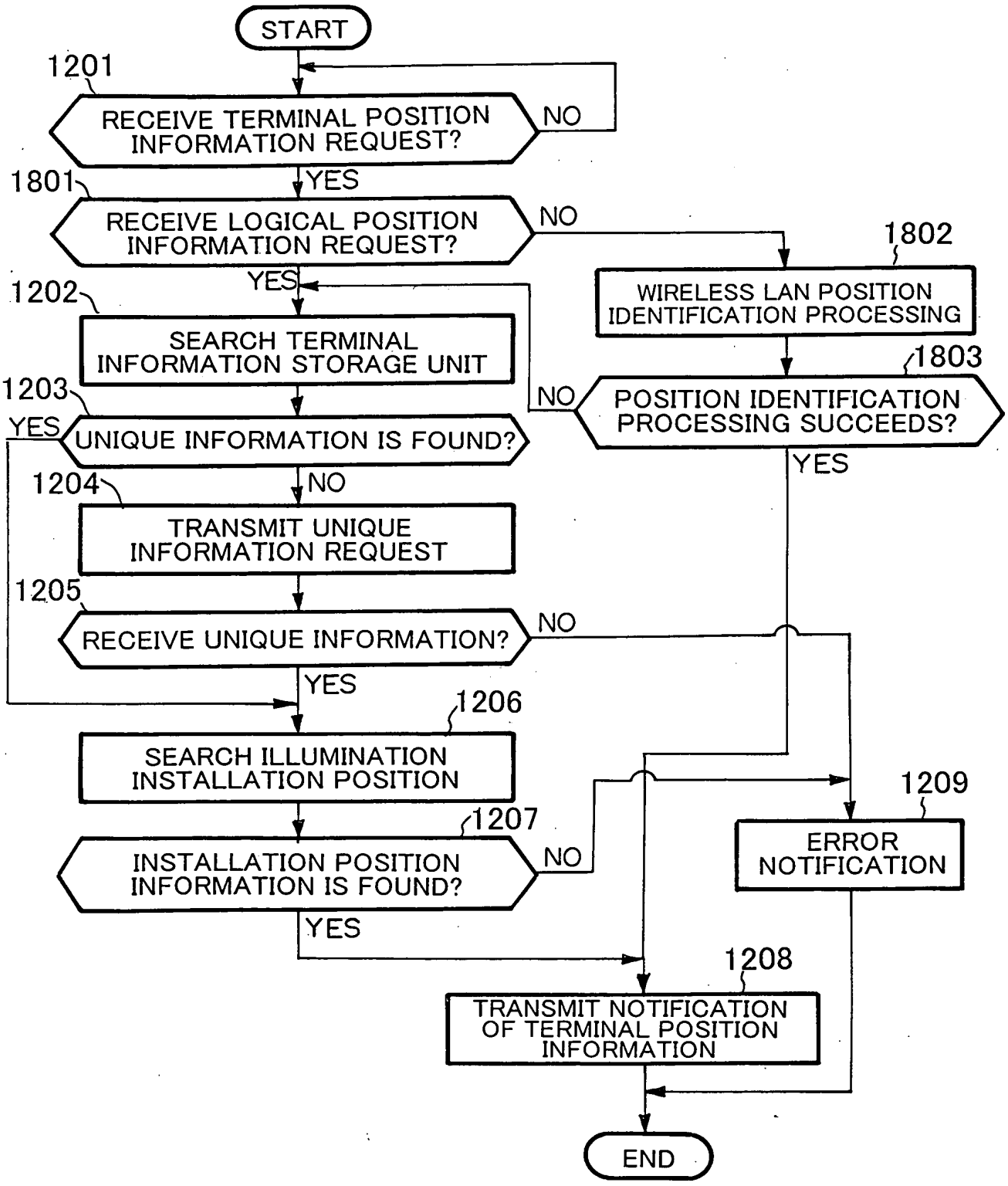

START
1201
RECEIVE TERMINAL POSITION INFORMATION REQUEST?
NO
YES
1801
RECEIVE LOGICAL POSITION INFORMATION REQUEST?
NO
1802
WIRELESS LAN POSITION IDENTIFICATION PROCESSING
YES
1202
SEARCH TERMINAL INFORMATION STORAGE UNIT
1803
POSITION IDENTIFICATION PROCESSING SUCCEEDS?
NO
1203
YES
UNIQUE INFORMATION IS FOUND?
YES
NO
1204
TRANSMIT UNIQUE INFORMATION REQUEST
1205
RECEIVE UNIQUE INFORMATION?
NO
YES
1206
SEARCH ILLUMINATION INSTALLATION POSITION
1209
1207
INSTALLATION POSITION INFORMATION IS FOUND?
NO
ERROR NOTIFICATION
YES
1208
TRANSMIT NOTIFICATION OF TERMINAL POSITION INFORMATION
END

FIG.19

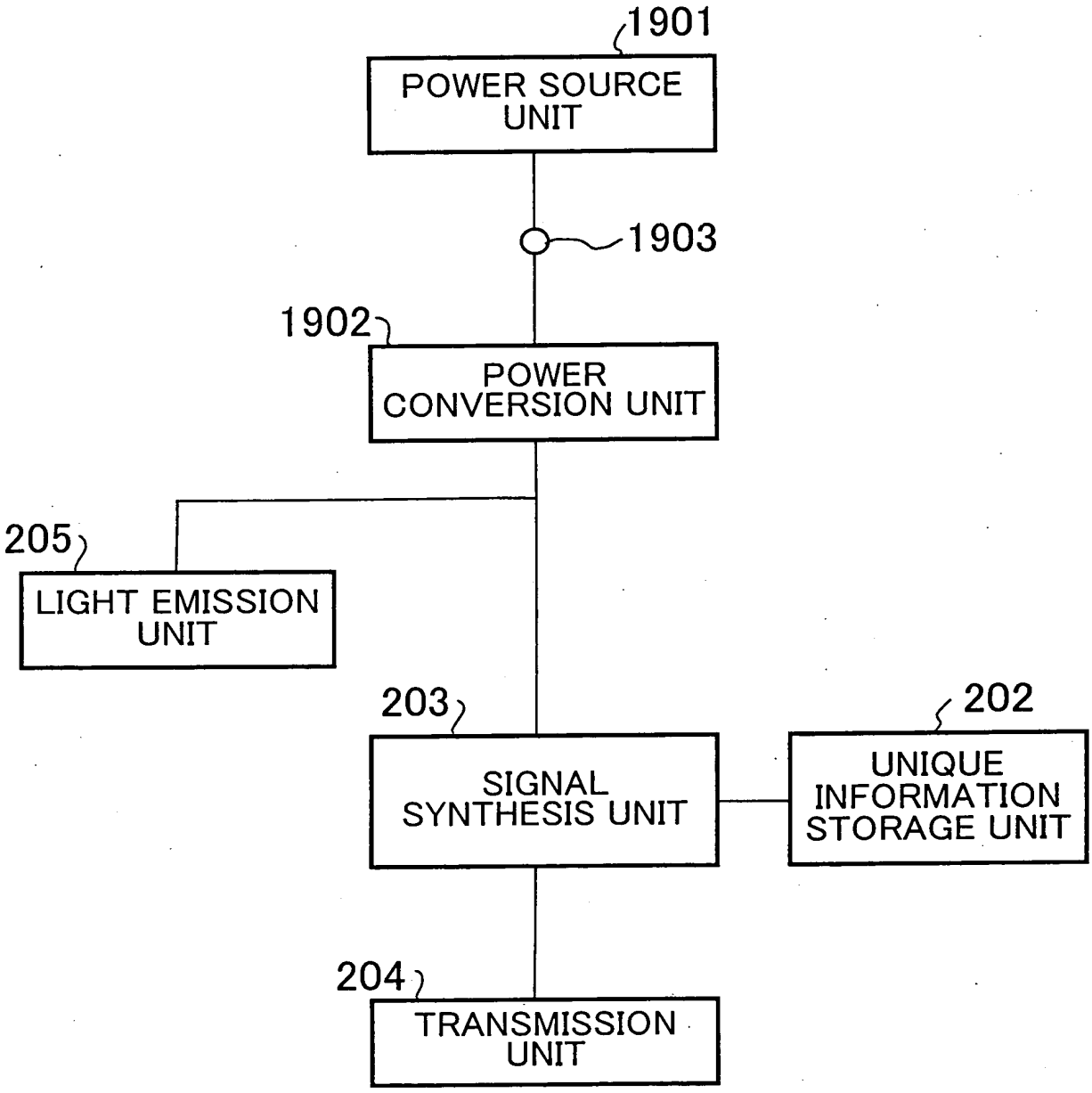

1901
POWER SOURCE UNIT
1903
1902
POWER CONVERSION UNIT
205
LIGHT EMISSION UNIT
203
SIGNAL SYNTHESIS UNIT
202
UNIQUE INFORMATION STORAGE UNIT
204
TRANSMISSION UNIT

FIG.20

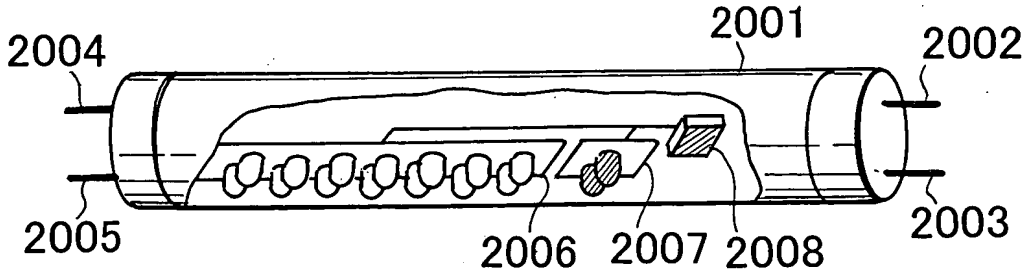

2001
2004
2002
2005
2006
2007
2008
2003

FIG.21

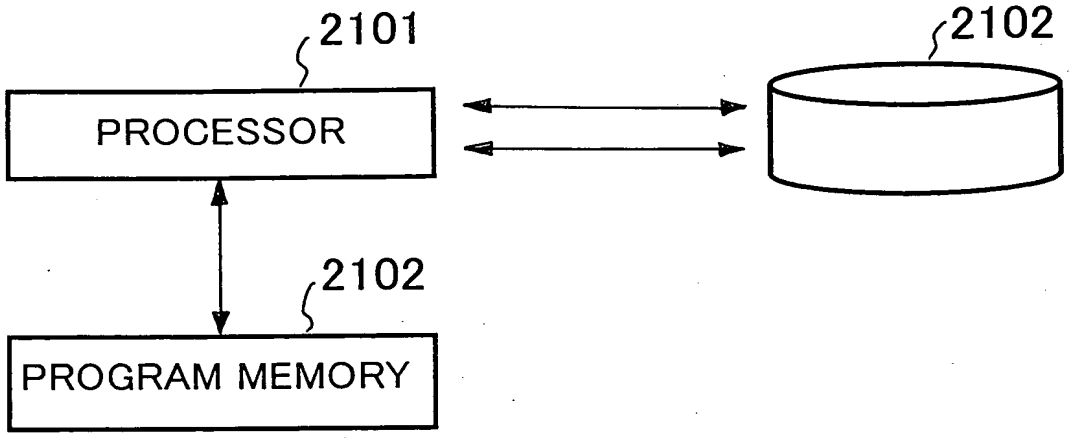

2101
2102
PROCESSOR
2102
PROGRAM MEMORY

FIG.22

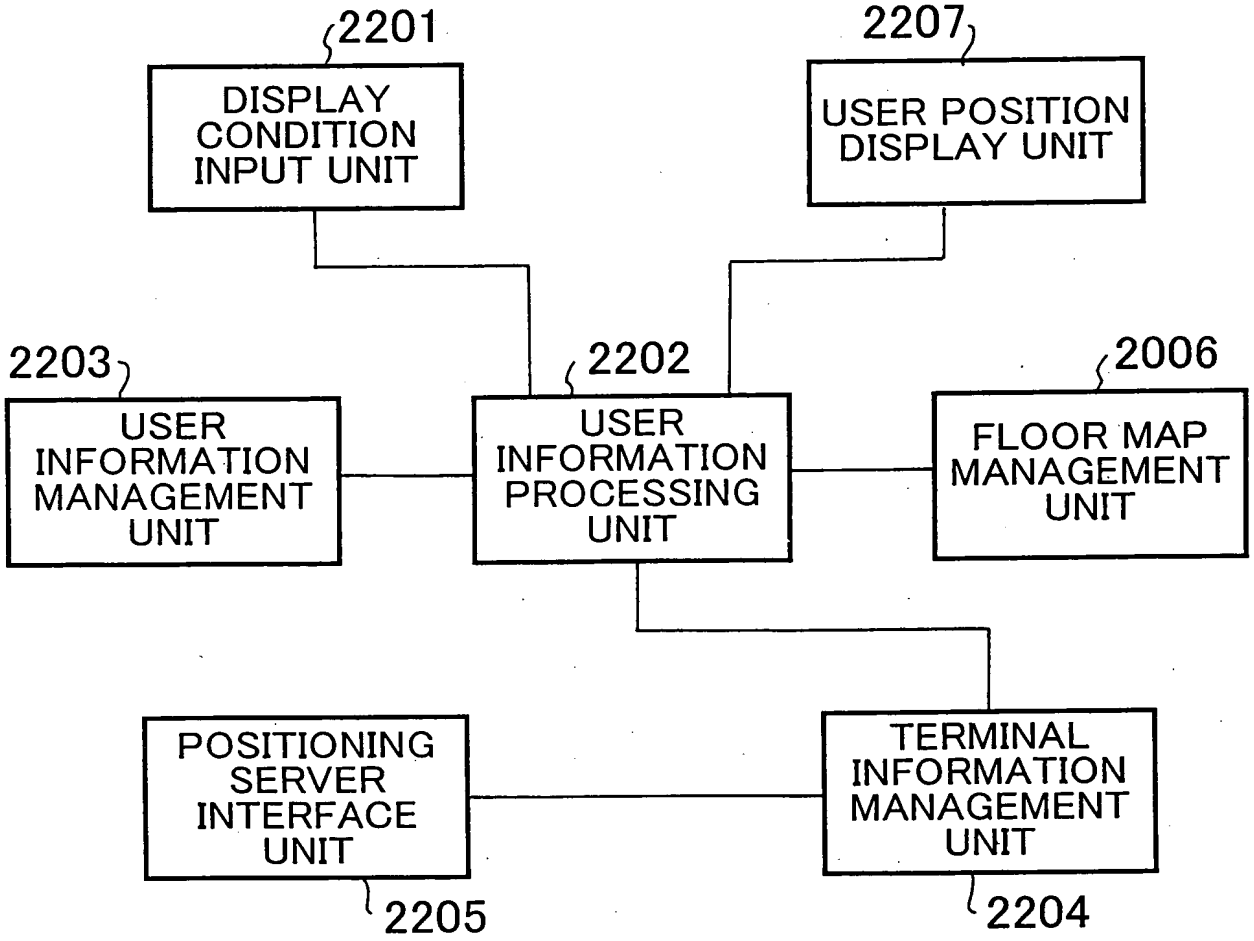

2201
DISPLAY CONDITION INPUT UNIT
2207
USER POSITION DISPLAY UNIT
2203
USER INFORMATION MANAGEMENT UNIT
2202
USER INFORMATION PROCESSING UNIT
2006
FLOOR MAP MANAGEMENT UNIT
POSITIONING SERVER INTERFACE UNIT
2205
TERMINAL INFORMATION MANAGEMENT UNIT
2204

FIG.23

USER ID	USER NAME	DEPARTMENT NAME	USER TERMINAL INFORMATION	TERMINAL TYPE
tanaka_taro	TARO TANAKA	FIRST SALES DEPARTMENT	tanaka_pc	WIRELESS LAN
sato_jiro	JIRO SATO	FIRST SALES DEPARTMENT	sato_pc	WIRELESS LAN
			sato_pc2	WIRED LAN
suzuki_saburo	SABURO SUZUKI	SECOND SALES DEPARTMENT	suzuki_pc	WIRED LAN
yamada_siro	SHIRO YAMADA	FIRST SALES DEPARTMENT	yamada_pc	WIRELESS LAN

FIG.24

TERMINAL NAME	POSITION INFORMATION	POSITION ACCURACY	POSITION ACQUISITION TIME
tanaka_pc	F=2, X=10, Y=30	10m	2003/1/10 17:20
sato_pc	F=2, X=10, Y=20	3m	2003/1/10 17:15
sato_pc2	F=1, X=20, Y=10	1m	2003/1/10 16:00
suzuki_pc	F=2, X=20, Y=20	1m	2003/1/10 17:00
yamada_pc	F=1, X=10, Y=10	10m	2003/1/9 12:00

FIG.25

FLOOR NAME	FILE NAME	FLOOR ID	AREA INFORMATION
FIRST FLOOR	1Fmap.jpg	F=1	X1=0, Y1=0, X1=50, Y2=50
SECOND FLOOR	2Fmap.jpg	F=2	X1=0, Y1=0, X1=50, Y2=50
THIRD FLOOR	3Fmap.jpg	F=3	X1=0, Y1=0, X1=50, Y2=40
FOURTH FLOOR	4Fmap.jpg	F=4	X1=20, Y1=0, X1=50, Y2=40
FIFTH FLOOR	5Fmap.jpg	F=5	X1=20, Y1=0, X1=50, Y2=40

FIG.26

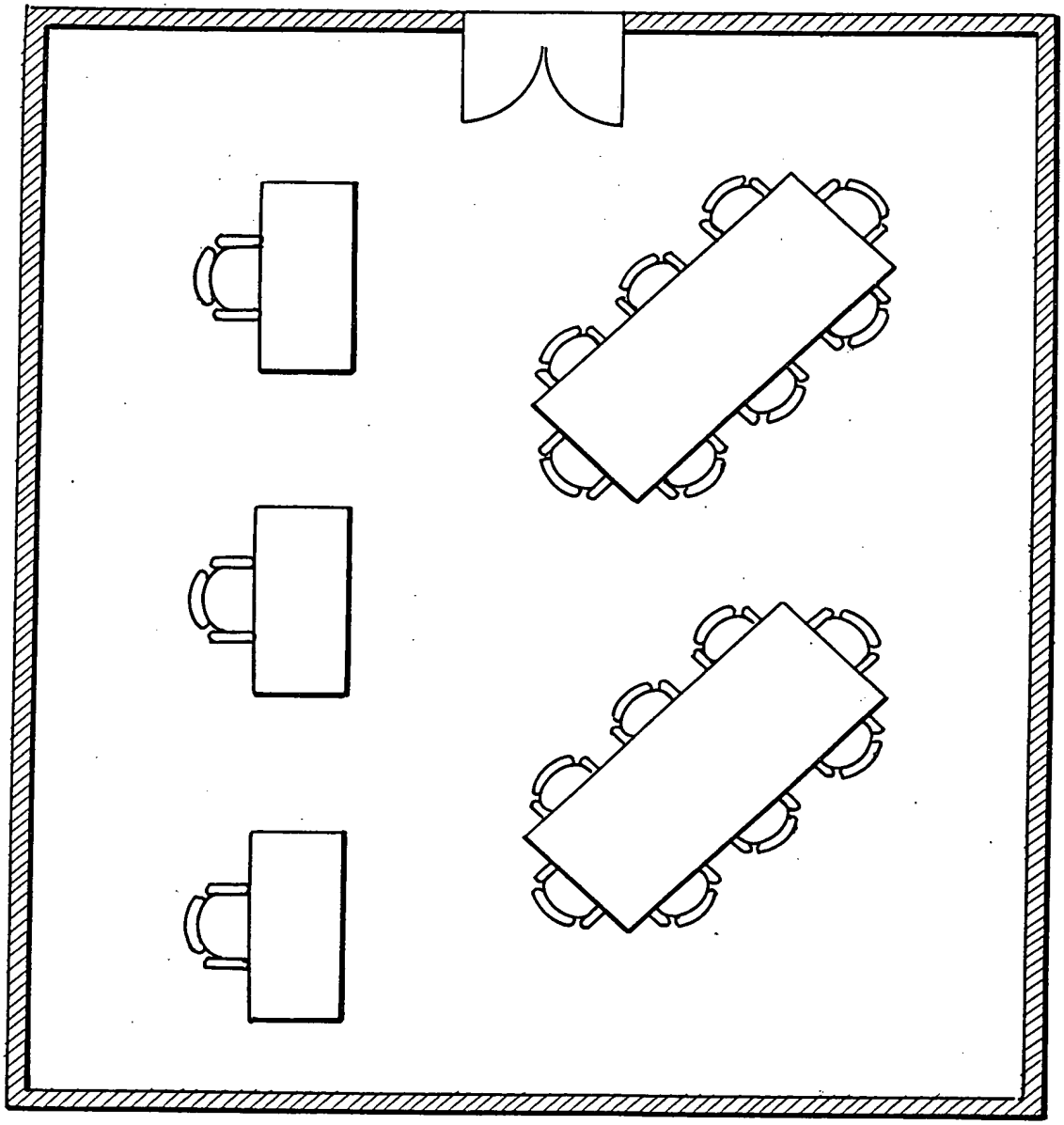


FIG.27

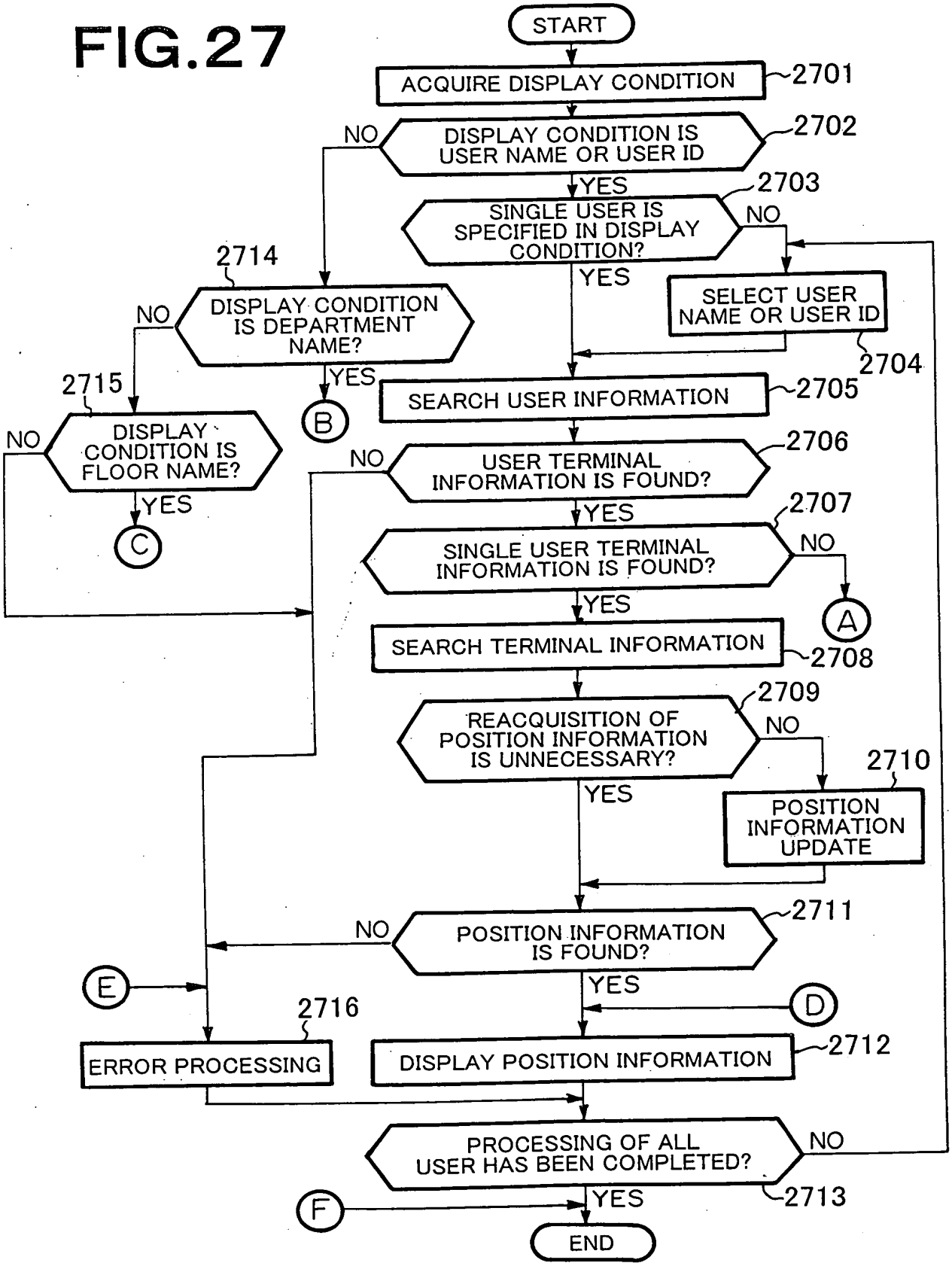

START
ACQUIRE DISPLAY CONDITION
2701
DISPLAY CONDITION IS USER NAME OR USER ID
2702
NO
YES
SINGLE USER IS SPECIFIED IN DISPLAY CONDITION?
2703
NO
YES
SELECT USER NAME OR USER ID
2704
2714
DISPLAY CONDITION IS DEPARTMENT NAME?
NO
YES
2715
DISPLAY CONDITION IS FLOOR NAME?
NO
YES
B
C
SEARCH USER INFORMATION
2705
USER TERMINAL INFORMATION IS FOUND?
2706
NO
YES
SINGLE USER TERMINAL INFORMATION IS FOUND?
2707
NO
YES
A
SEARCH TERMINAL INFORMATION
2708
REACQUISITION OF POSITION INFORMATION IS UNNECESSARY?
2709
NO
YES
POSITION INFORMATION UPDATE
2710
POSITION INFORMATION IS FOUND?
2711
NO
YES
E
D
2716
ERROR PROCESSING
DISPLAY POSITION INFORMATION
2712
PROCESSING OF ALL USER HAS BEEN COMPLETED?
NO
YES
2713
F
END

FIG.28

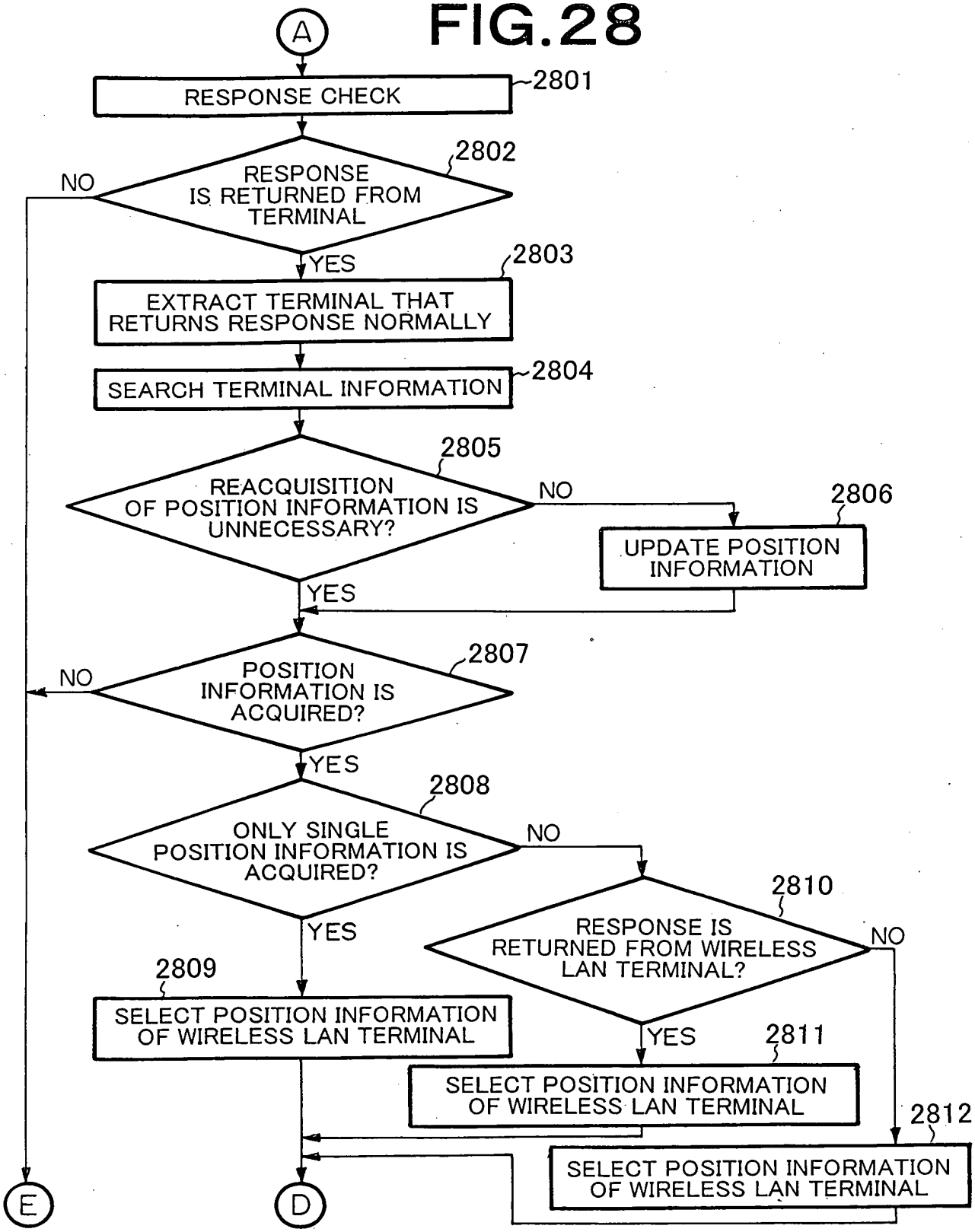

A
RESPONSE CHECK
2801
RESPONSE IS RETURNED FROM TERMINAL
2802
NO
YES
EXTRACT TERMINAL THAT RETURNS RESPONSE NORMALLY
2803
SEARCH TERMINAL INFORMATION
2804
REACQUISITION OF POSITION INFORMATION IS UNNECESSARY?
2805
NO
UPDATE POSITION INFORMATION
2806
YES
POSITION INFORMATION IS ACQUIRED?
2807
NO
YES
ONLY SINGLE POSITION INFORMATION IS ACQUIRED?
2808
NO
YES
RESPONSE IS RETURNED FROM WIRELESS LAN TERMINAL?
2810
NO
YES
SELECT POSITION INFORMATION OF WIRELESS LAN TERMINAL
2809
SELECT POSITION INFORMATION OF WIRELESS LAN TERMINAL
2811
SELECT POSITION INFORMATION OF WIRELESS LAN TERMINAL
2812
E
D

FIG.29

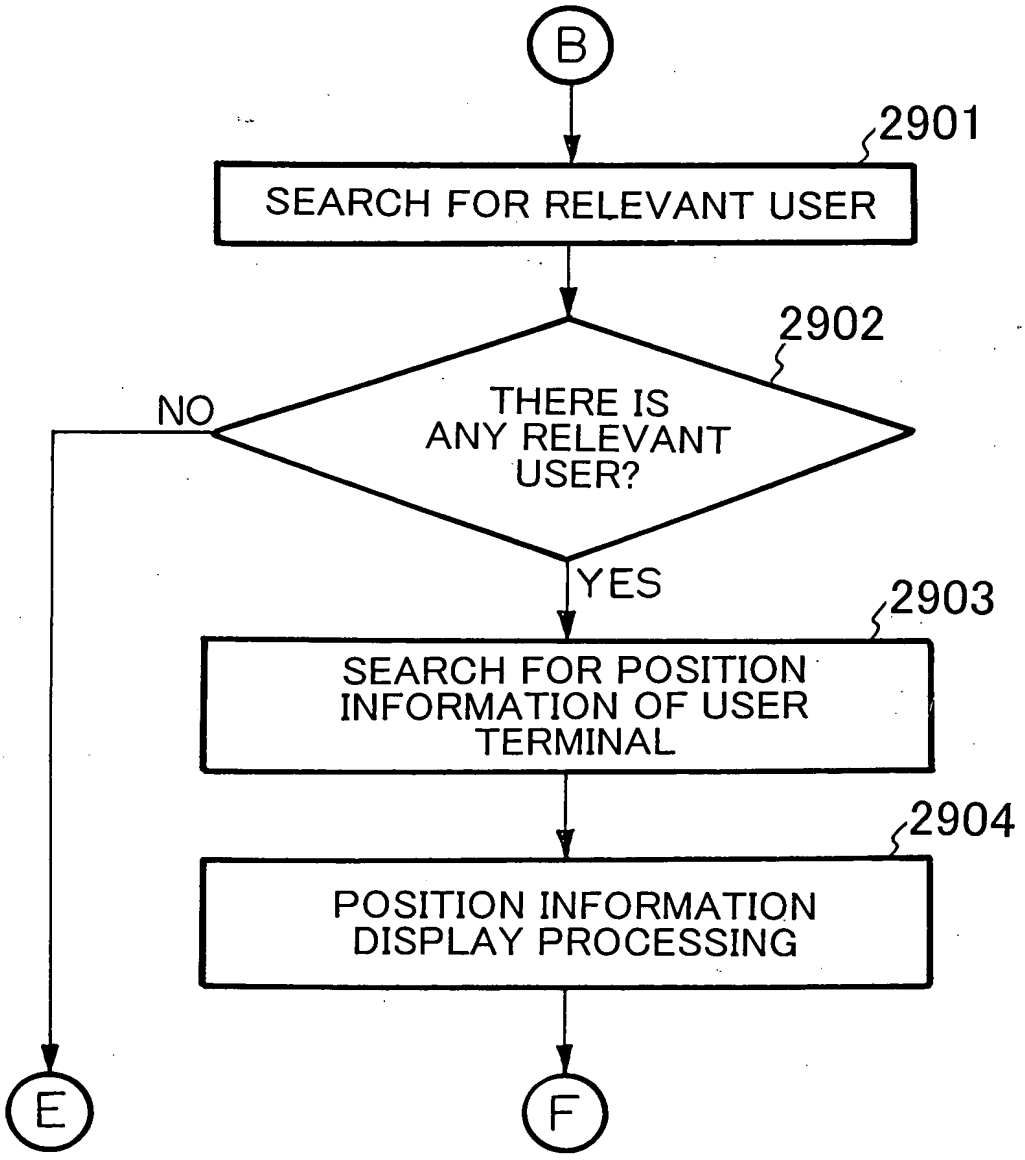

B
2901
SEARCH FOR RELEVANT USER
2902
THERE IS ANY RELEVANT USER?
NO
YES
2903
SEARCH FOR POSITION INFORMATION OF USER TERMINAL
2904
POSITION INFORMATION DISPLAY PROCESSING
E
F

FIG.30

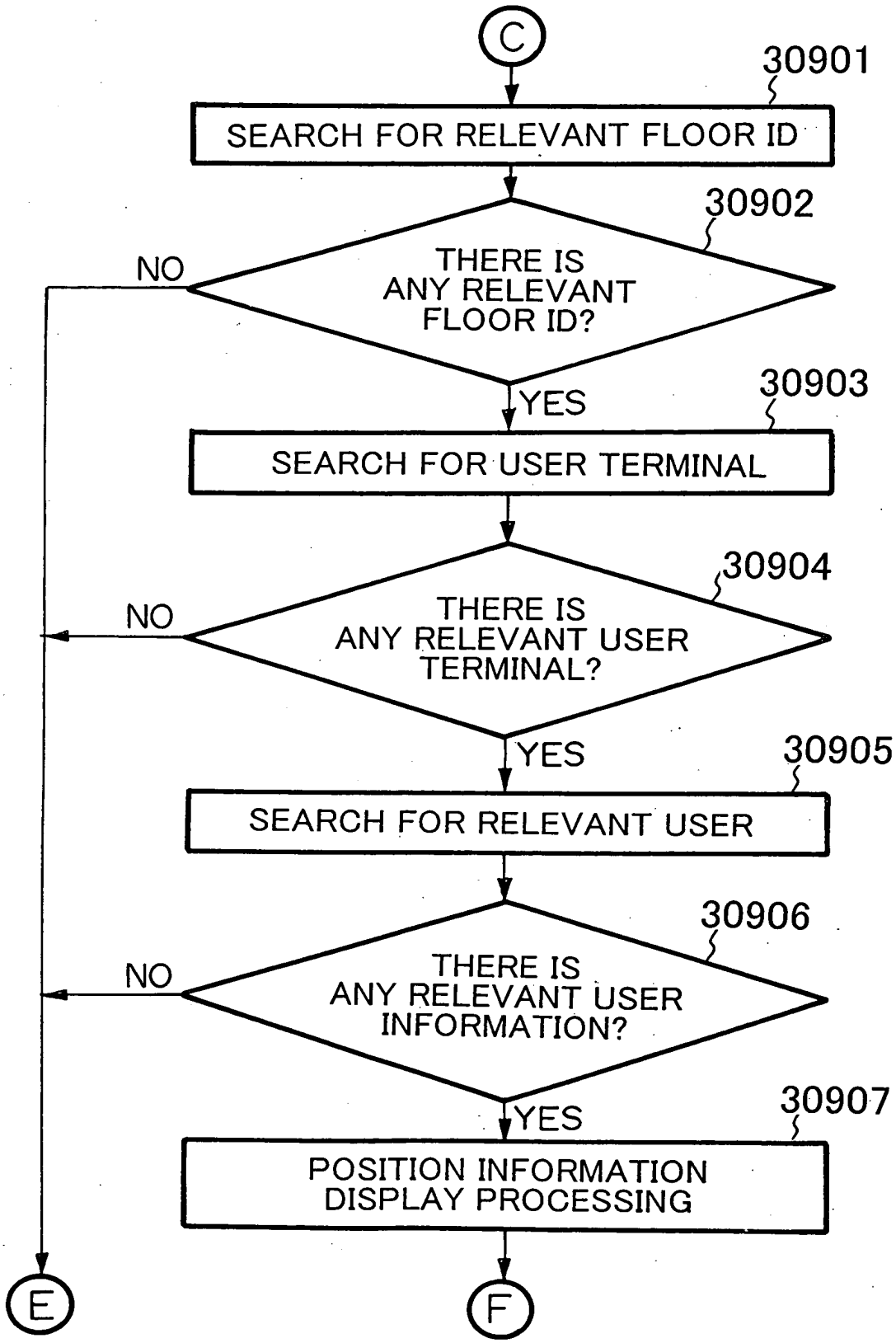

C
30901
SEARCH FOR RELEVANT FLOOR ID
30902
THERE IS ANY RELEVANT FLOOR ID?
NO
YES
30903
SEARCH FOR USER TERMINAL
30904
THERE IS ANY RELEVANT USER TERMINAL?
NO
YES
30905
SEARCH FOR RELEVANT USER
30906
THERE IS ANY RELEVANT USER INFORMATION?
NO
YES
30907
POSITION INFORMATION DISPLAY PROCESSING
E
F

FIG.31

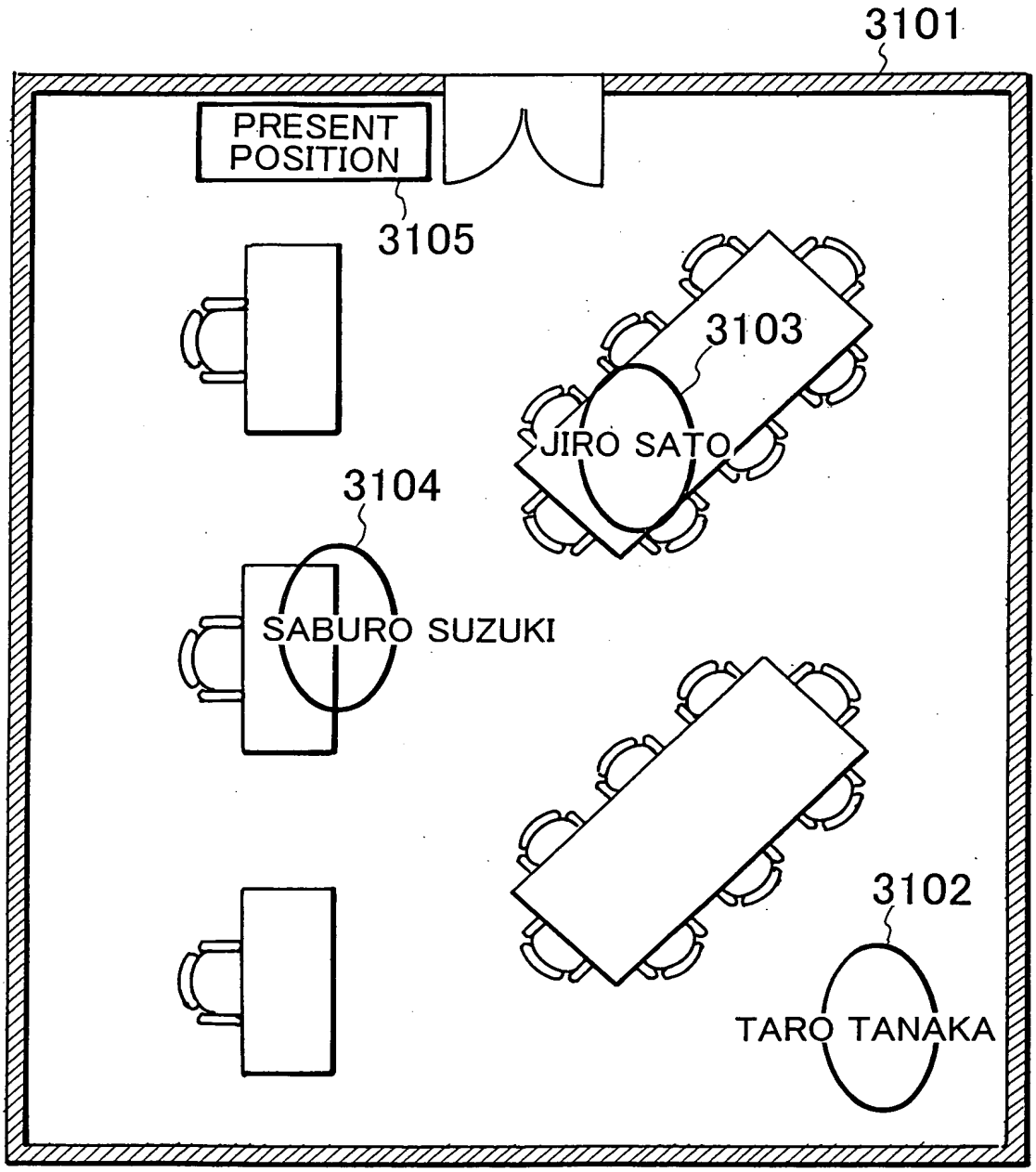

3101
PRESENT POSITION
3105
3103
JIRO SATO
3104
SABURO SUZUKI
3102
TARO TANAKA

FIG.32

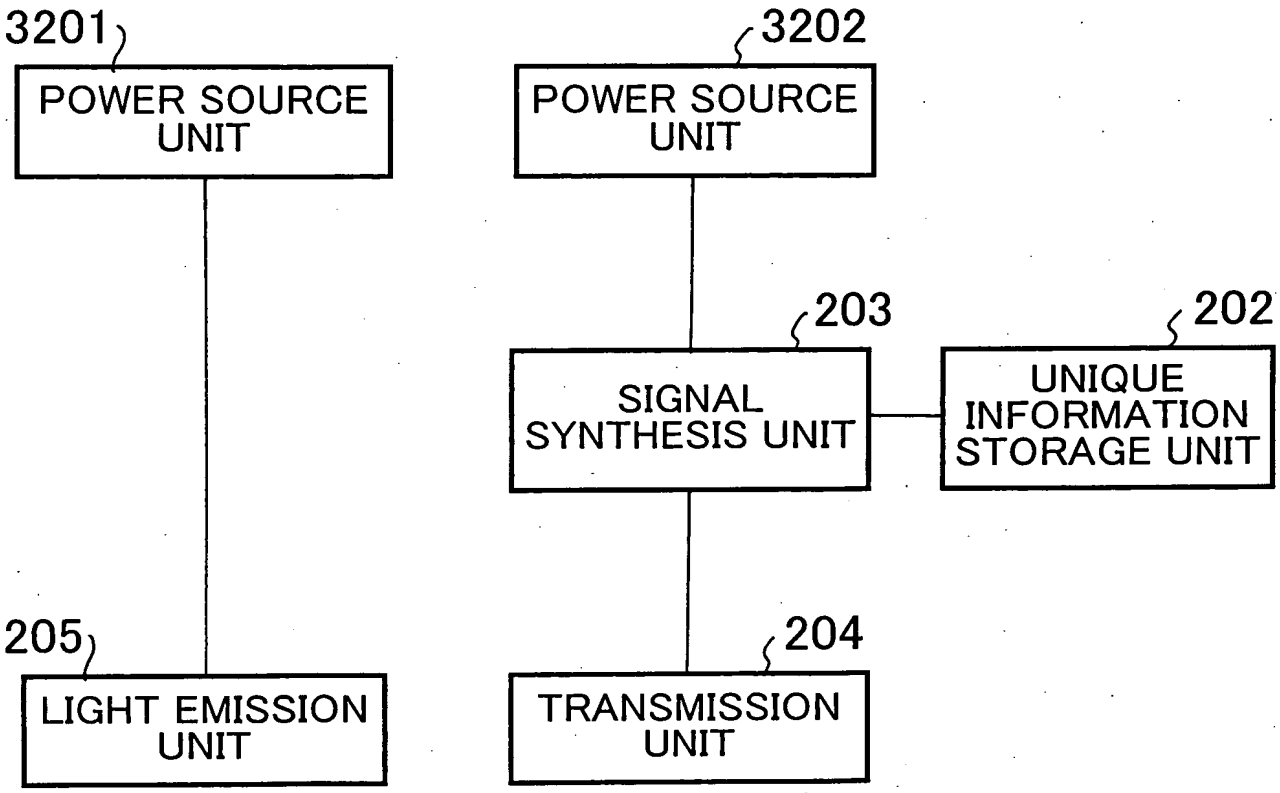

3201
POWER SOURCE UNIT
3202
POWER SOURCE UNIT
203
SIGNAL SYNTHESIS UNIT
202
UNIQUE INFORMATION STORAGE UNIT
205
LIGHT EMISSION UNIT
204
TRANSMISSION UNIT

FIG.33

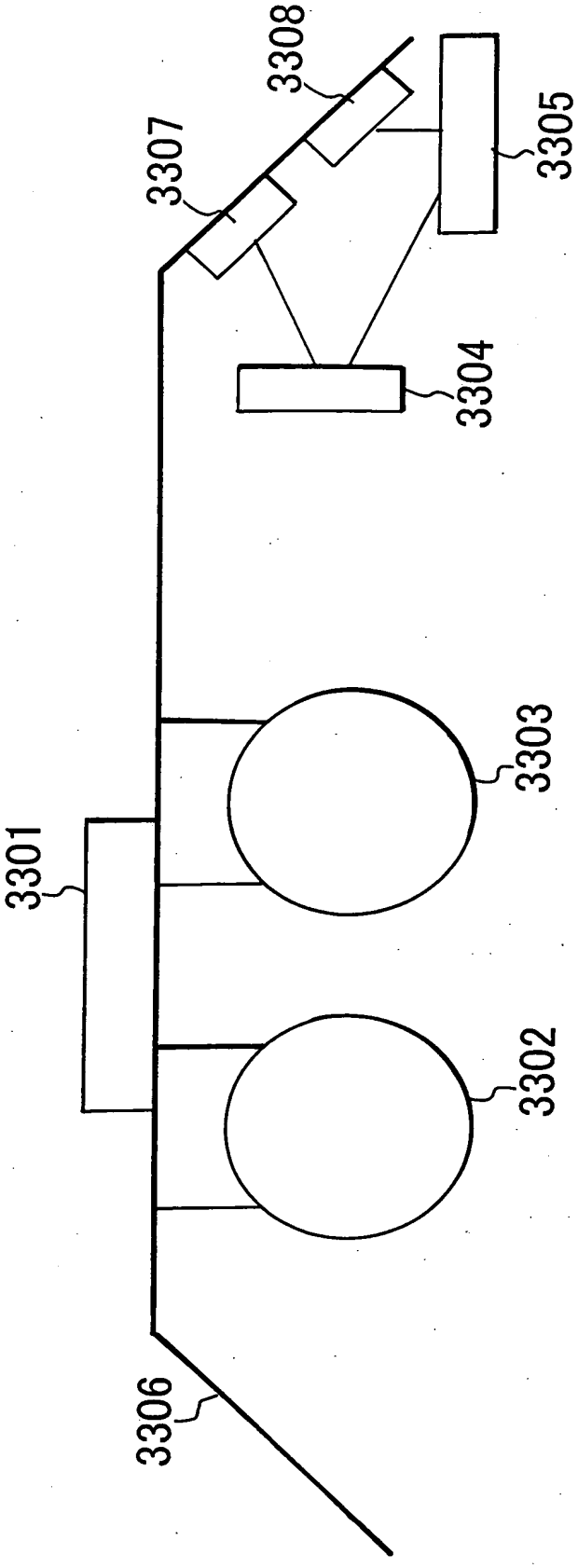


FIG.34

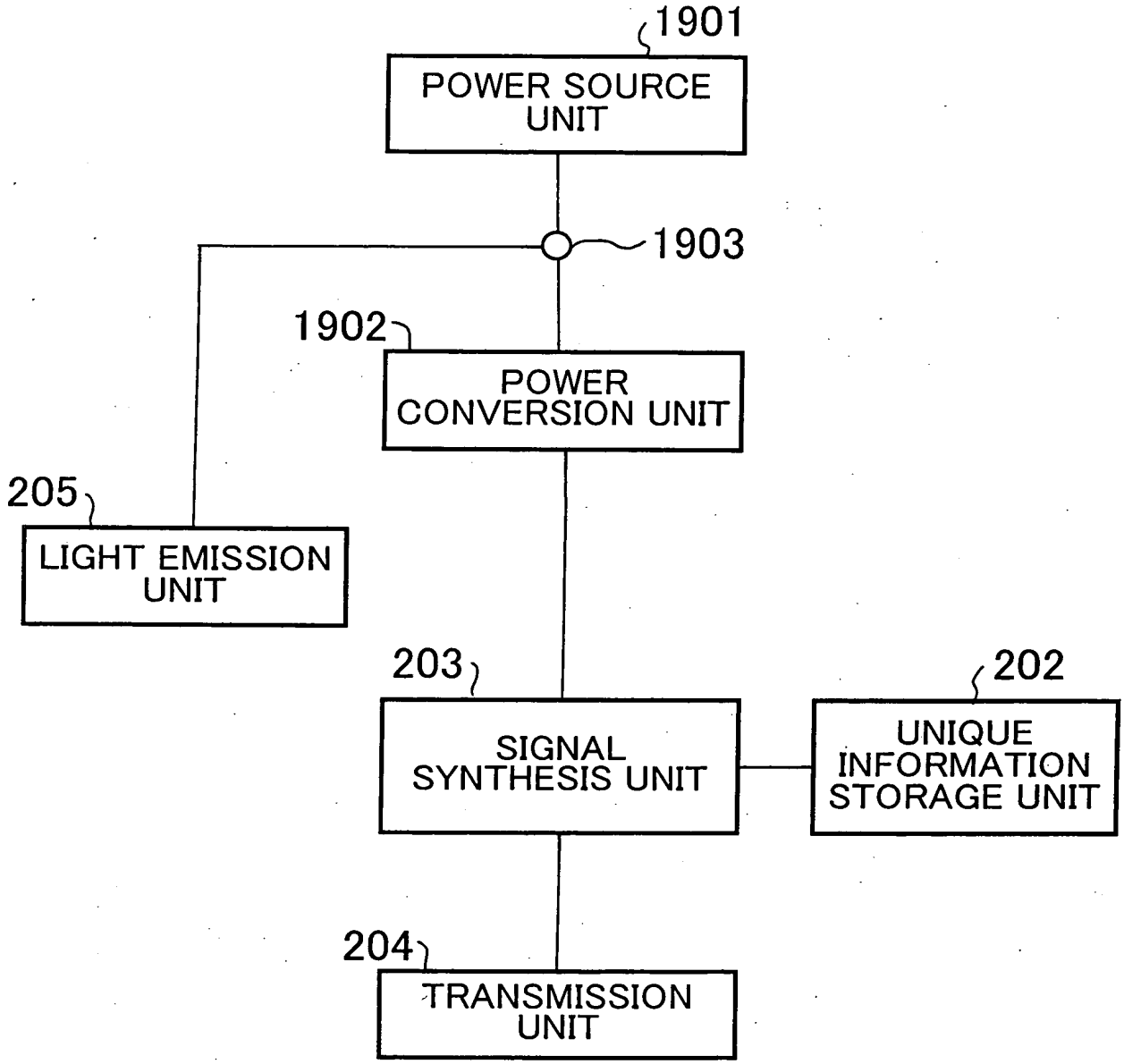

1901
POWER SOURCE UNIT
1903
1902
POWER CONVERSION UNIT
205
LIGHT EMISSION UNIT
203
SIGNAL SYNTHESIS UNIT
202
UNIQUE INFORMATION STORAGE UNIT
204
TRANSMISSION UNIT

FIG.35

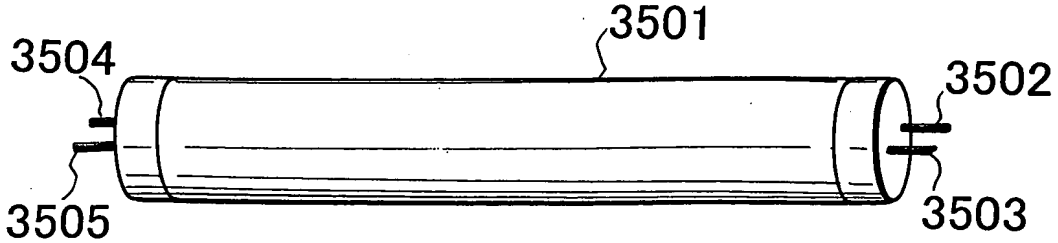

3501
3504
3502
3505
3503

FIG.36

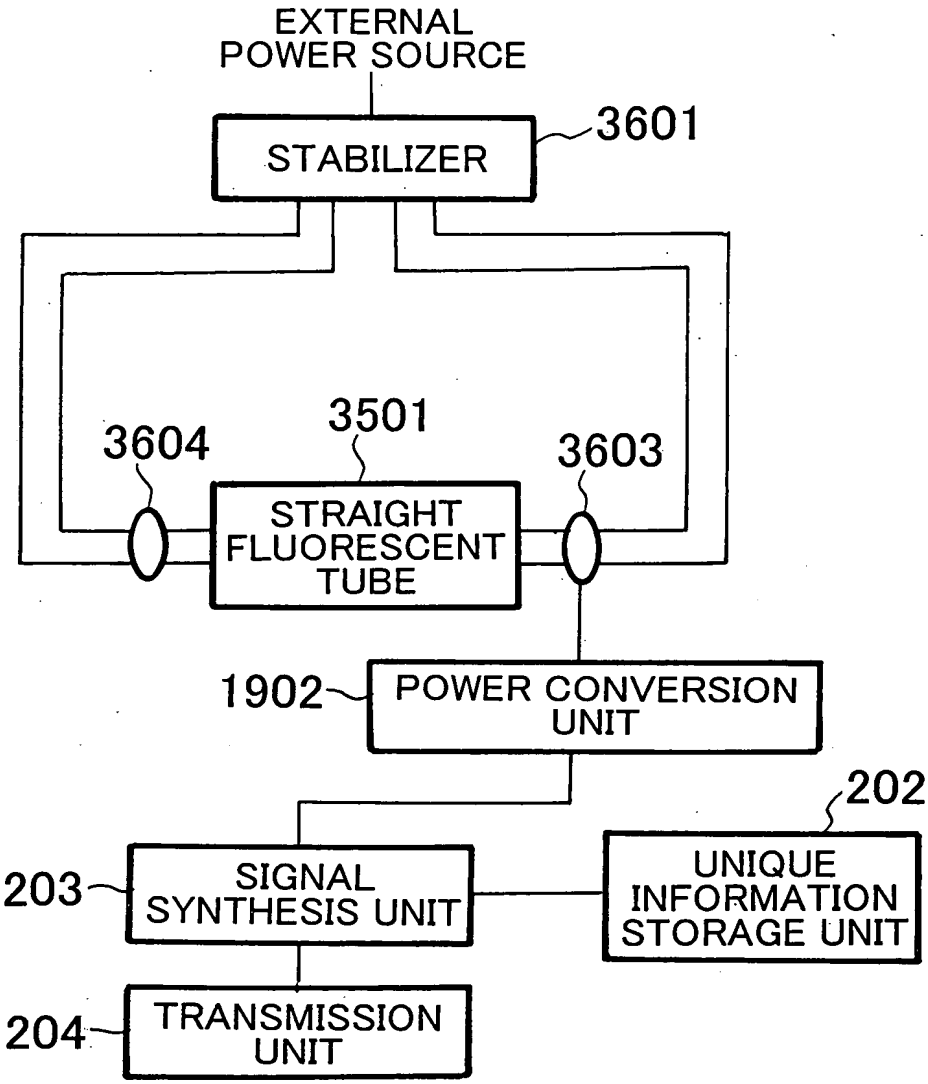

EXTERNAL POWER SOURCE
3601
STABILIZER
3501
3604
3603
STRAIGHT FLUORESCENT TUBE
1902
POWER CONVERSION UNIT
202
203
SIGNAL SYNTHESIS UNIT
UNIQUE INFORMATION STORAGE UNIT
204
TRANSMISSION UNIT

FIG.37

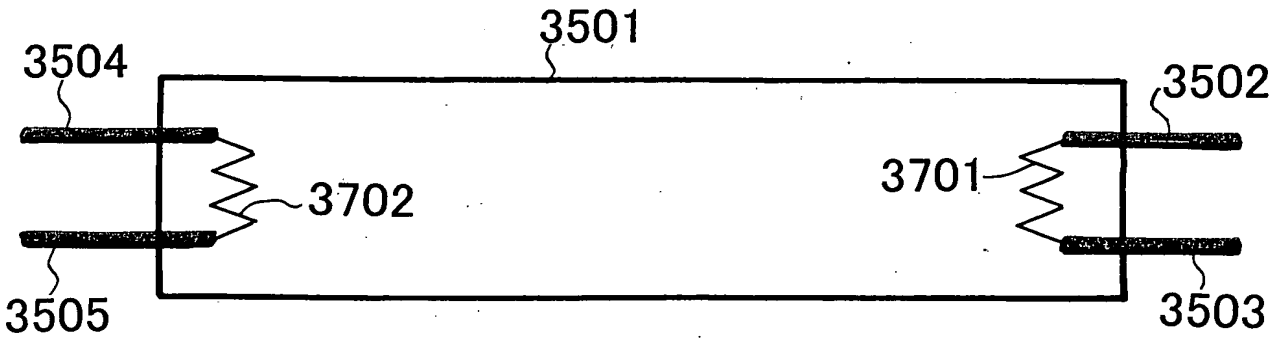

3501
3504
3502
3702
3701
3505
3503

FIG.38

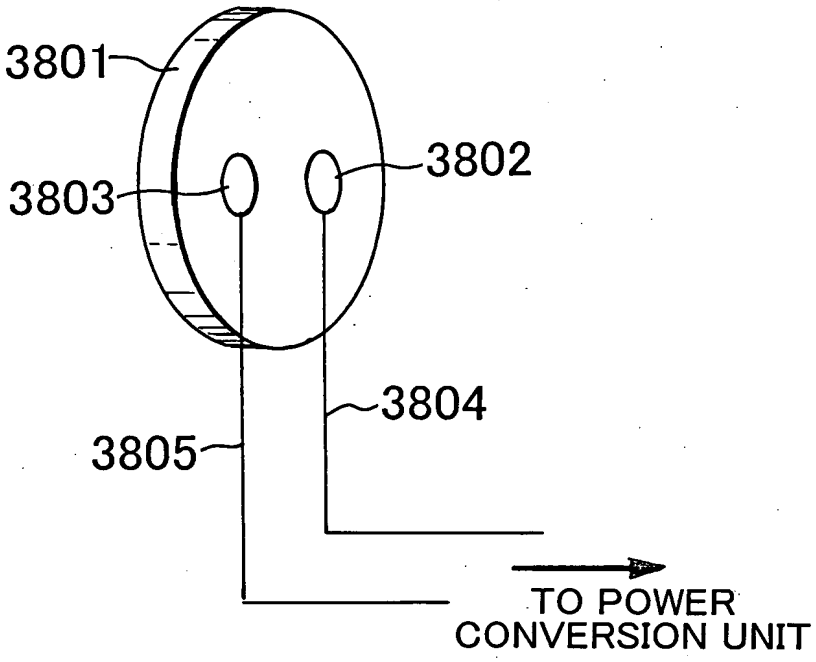

3801
3802
3803
3804
3805
TO POWER
CONVERSION UNIT

FIG.39

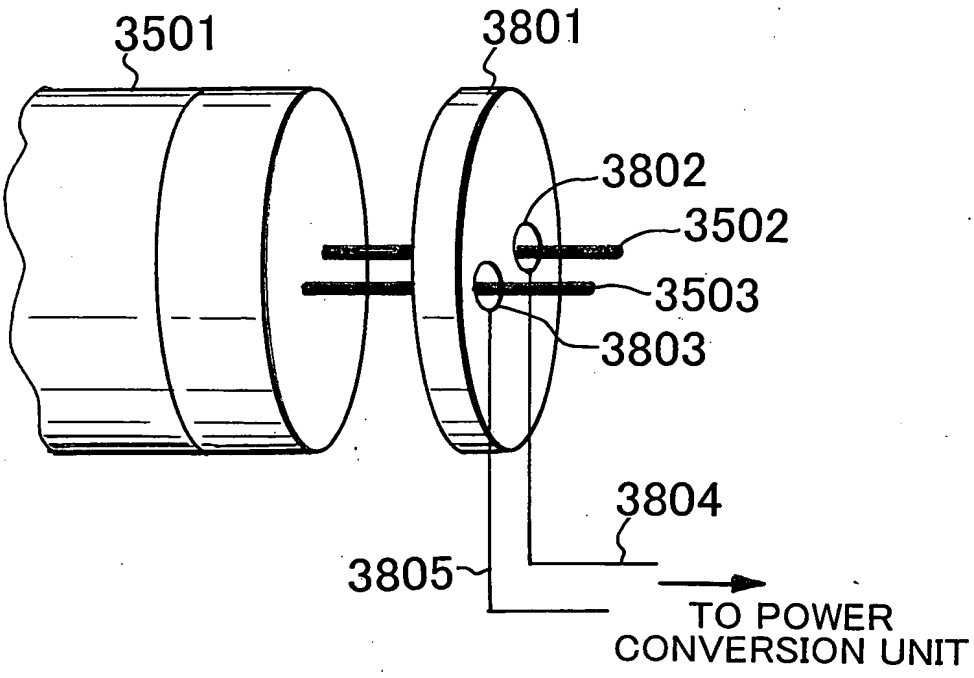

3501
3801
3802
3502
3503
3803
3804
3805
TO POWER
CONVERSION UNIT

FIG.40

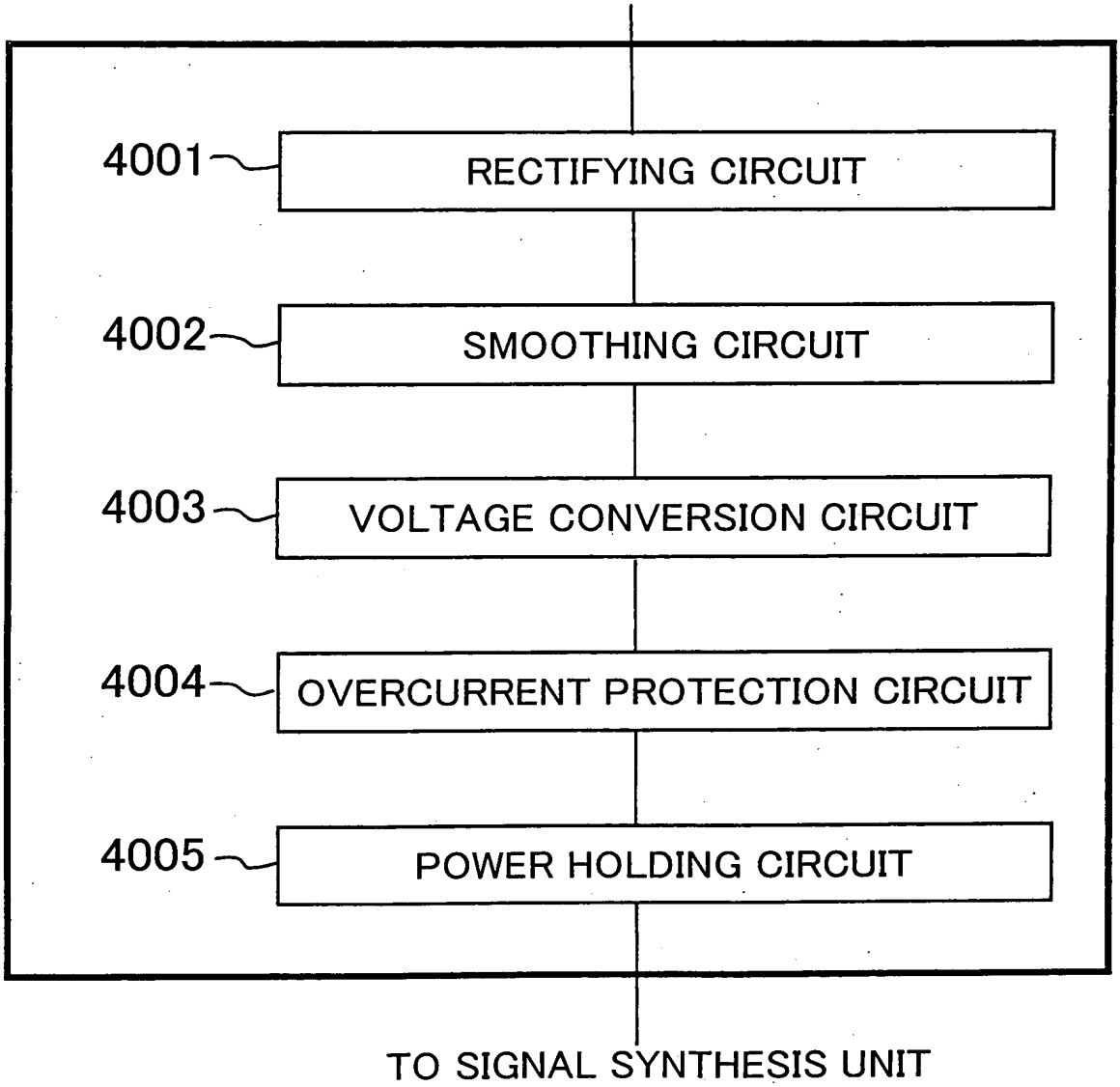

4001
RECTIFYING CIRCUIT
4002
SMOOTHING CIRCUIT
4003
VOLTAGE CONVERSION CIRCUIT
4004
OVERCURRENT PROTECTION CIRCUIT
4005
POWER HOLDING CIRCUIT
TO SIGNAL SYNTHESIS UNIT

FIG.41

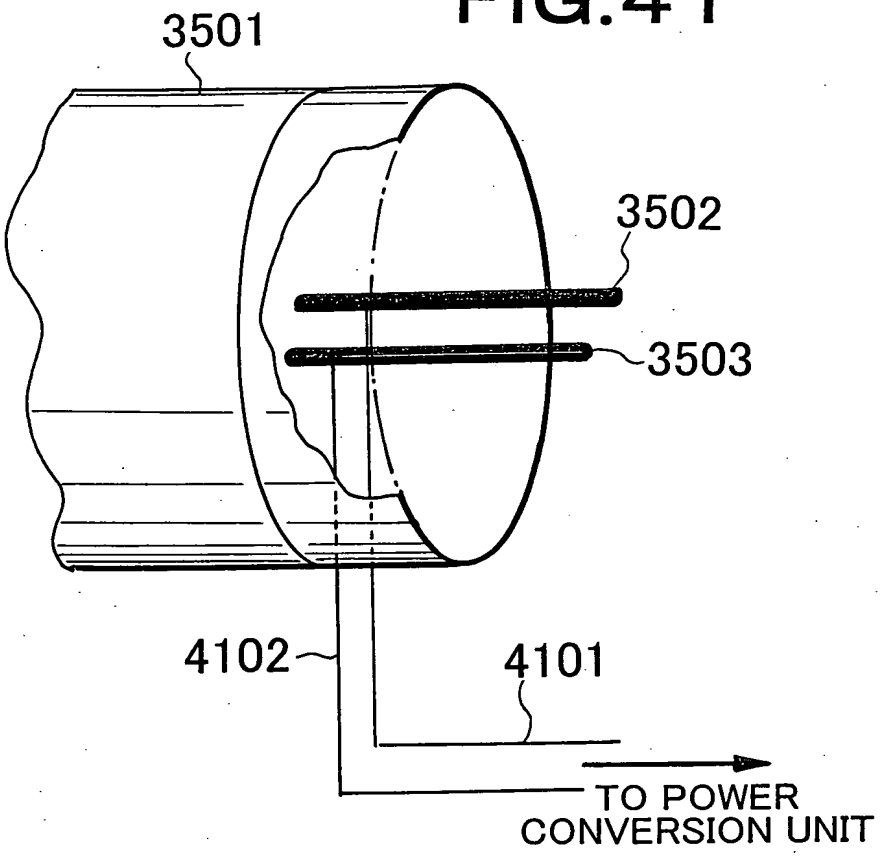

3501
3502
3503
4102
4101
TO POWER
CONVERSION UNIT

FIG.42

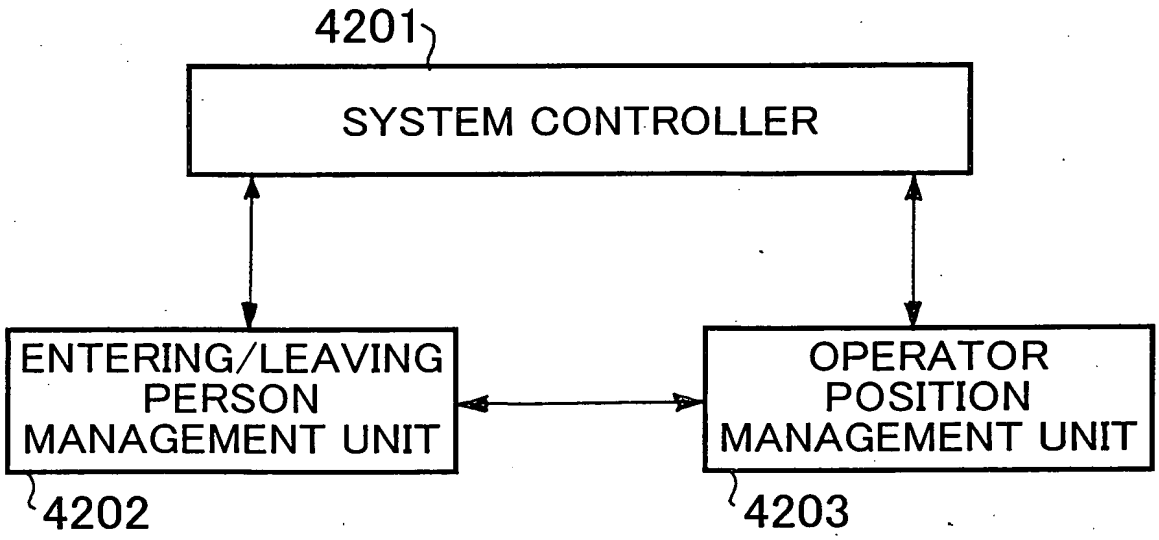
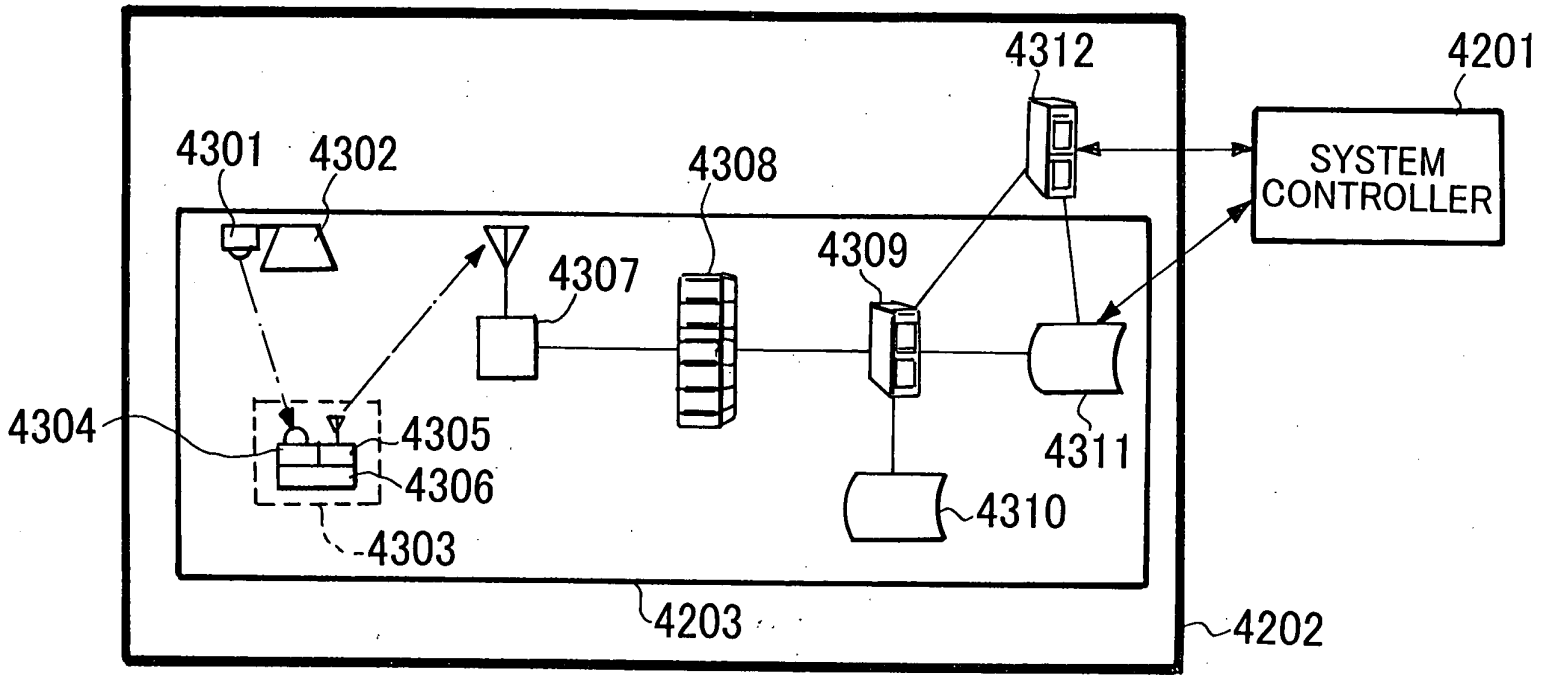

4201
SYSTEM CONTROLLER
ENTERING/LEAVING
PERSON
MANAGEMENT UNIT
4202
OPERATOR
POSITION
MANAGEMENT UNIT
4203

FIG.43



4202: ENTERING/LEAVING PERSON MANAGEMENT UNIT
4203: OPERATOR POSITION MANAGEMENT UNIT
4301: TRANSMITTER
4302: ILLUMINATION DEVICE
4303: TERMINAL
4304: LIGHT SIGNAL DETECTION UNIT
4305: PHS TRANSMITTER
4306: OPERATION CONTROLLER
4307: PHS BASE STATION
4308: SWITCHING SYSTEM
4309: POSITIONING SERVER
4310: ILLUMINATION INSTALLATION POSITION INFORMATION DB
4311: TERMINAL POSITION INFORMATION DB
4312: ENTERING/LEAVING PERSON MANAGEMENT SERVER

FIG.44

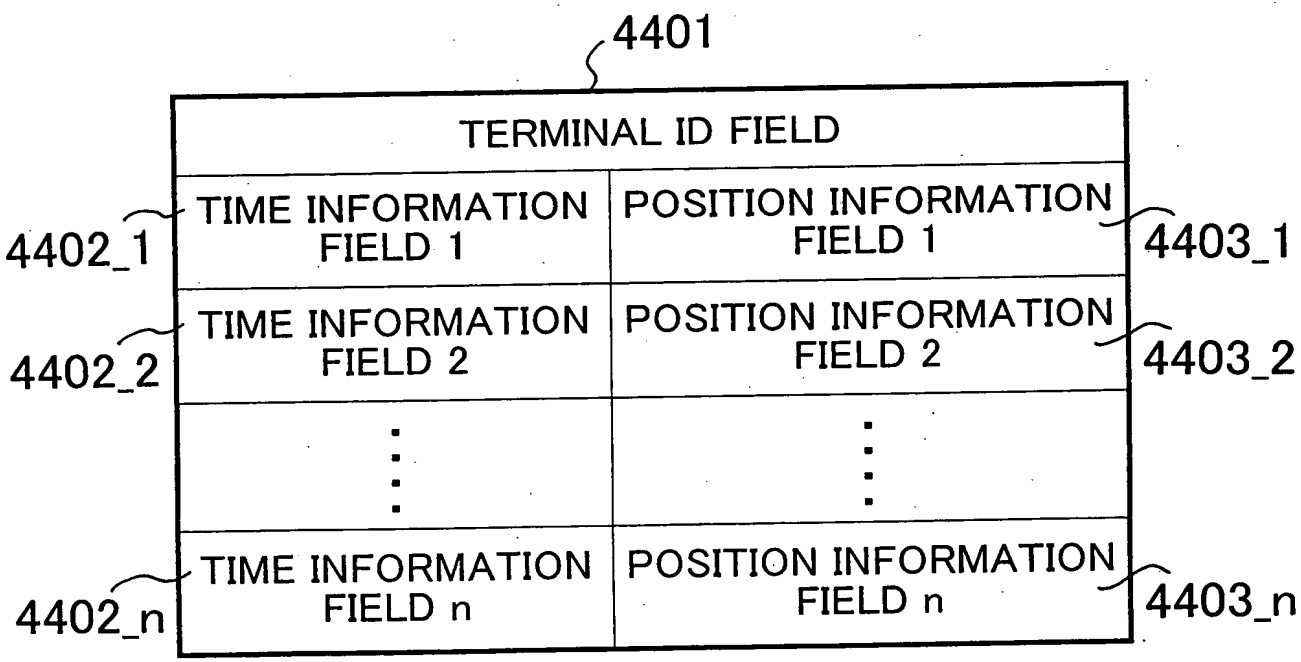

4401
TERMINAL ID FIELD
TIME INFORMATION FIELD 1
POSITION INFORMATION FIELD 1
4402_1
4403_1
TIME INFORMATION FIELD 2
POSITION INFORMATION FIELD 2
4402_2
4403_2
TIME INFORMATION FIELD n
POSITION INFORMATION FIELD n
4402_n
4403_n

FIG.45

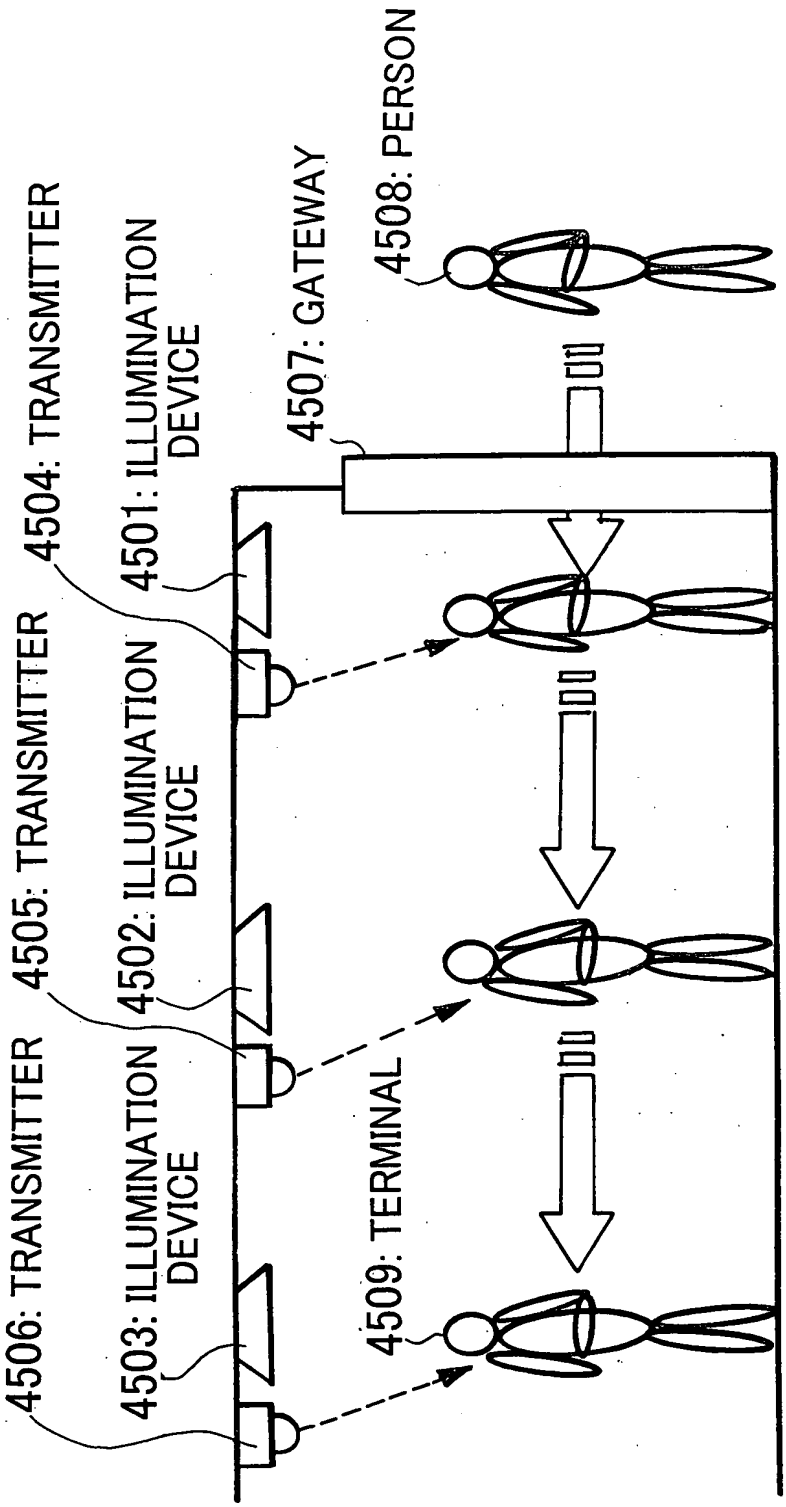

4506: TRANSMITTER
4505: TRANSMITTER
4504: TRANSMITTER
4503: ILLUMINATION DEVICE
4502: ILLUMINATION DEVICE
4501: ILLUMINATION DEVICE
4507: GATEWAY
4508: PERSON
4509: TERMINAL
TIME 10:10:35
TIME 10:10:25
TIME 10:10:15

FIG.46

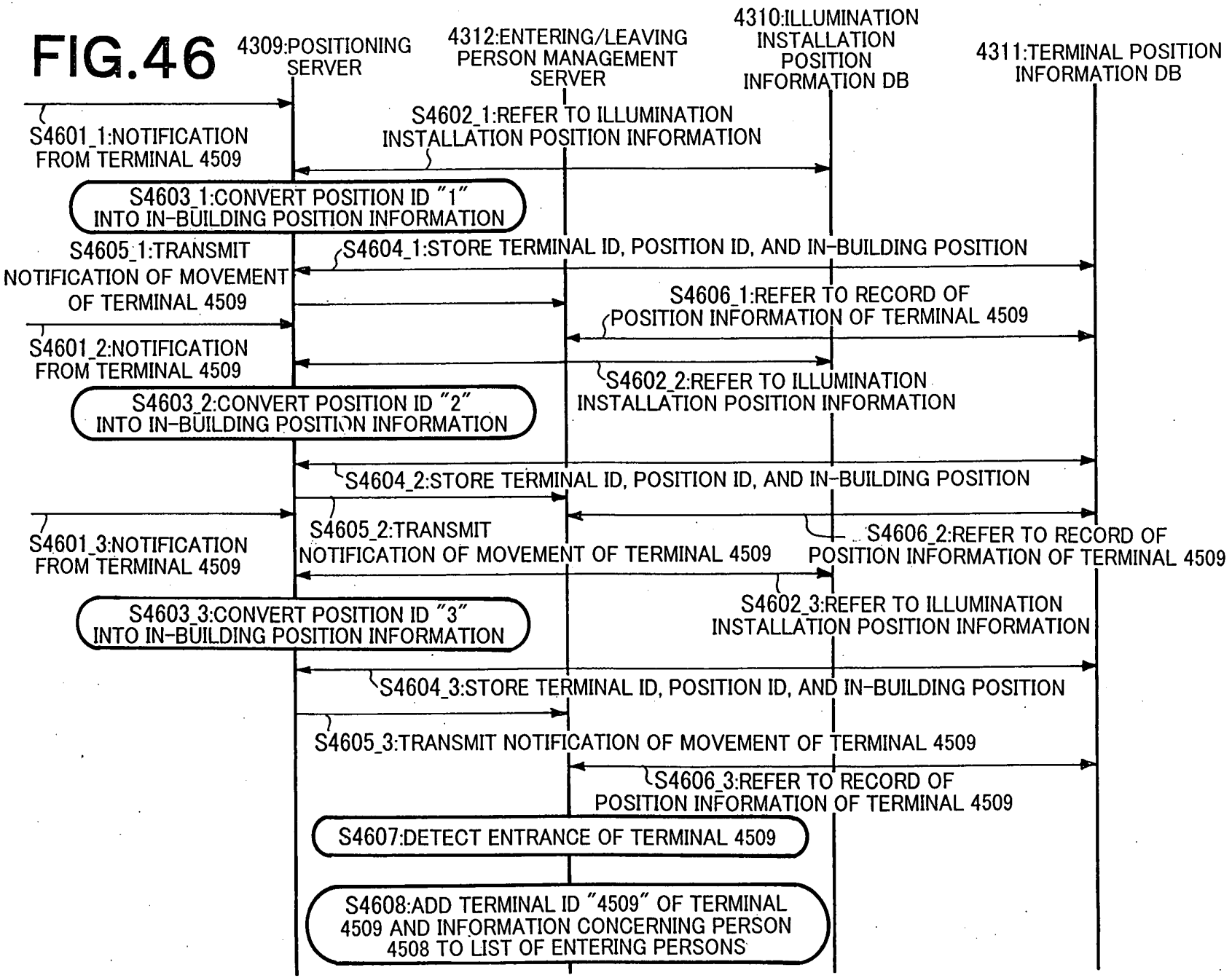

4309:POSITIONING SERVER
4312:ENTERING/LEAVING PERSON MANAGEMENT SERVER
4310:ILLUMINATION INSTALLATION POSITION INFORMATION DB
4311:TERMINAL POSITION INFORMATION DB
S4601_1:NOTIFICATION FROM TERMINAL 4509
S4602_1:REFER TO ILLUMINATION INSTALLATION POSITION INFORMATION
S4603_1:CONVERT POSITION ID "1" INTO IN-BUILDING POSITION INFORMATION
S4605_1:TRANSMIT NOTIFICATION OF MOVEMENT OF TERMINAL 4509
S4604_1:STORE TERMINAL ID, POSITION ID, AND IN-BUILDING POSITION
S4606_1:REFER TO RECORD OF POSITION INFORMATION OF TERMINAL 4509
S4601_2:NOTIFICATION FROM TERMINAL 4509
S4602_2:REFER TO ILLUMINATION INSTALLATION POSITION INFORMATION
S4603_2:CONVERT POSITION ID "2" INTO IN-BUILDING POSITION INFORMATION
S4604_2:STORE TERMINAL ID, POSITION ID, AND IN-BUILDING POSITION
S4601_3:NOTIFICATION FROM TERMINAL 4509
S4605_2:TRANSMIT NOTIFICATION OF MOVEMENT OF TERMINAL 4509
S4606_2:REFER TO RECORD OF POSITION INFORMATION OF TERMINAL 4509
S4603_3:CONVERT POSITION ID "3" INTO IN-BUILDING POSITION INFORMATION
S4602_3:REFER TO ILLUMINATION INSTALLATION POSITION INFORMATION
S4604_3:STORE TERMINAL ID, POSITION ID, AND IN-BUILDING POSITION
S4605_3:TRANSMIT NOTIFICATION OF MOVEMENT OF TERMINAL 4509
S4606_3:REFER TO RECORD OF POSITION INFORMATION OF TERMINAL 4509
S4607:DETECT ENTRANCE OF TERMINAL 4509
S4608:ADD TERMINAL ID "4509" OF TERMINAL 4509 AND INFORMATION CONCERNING PERSON 4508 TO LIST OF ENTERING PERSONS

FIG.47

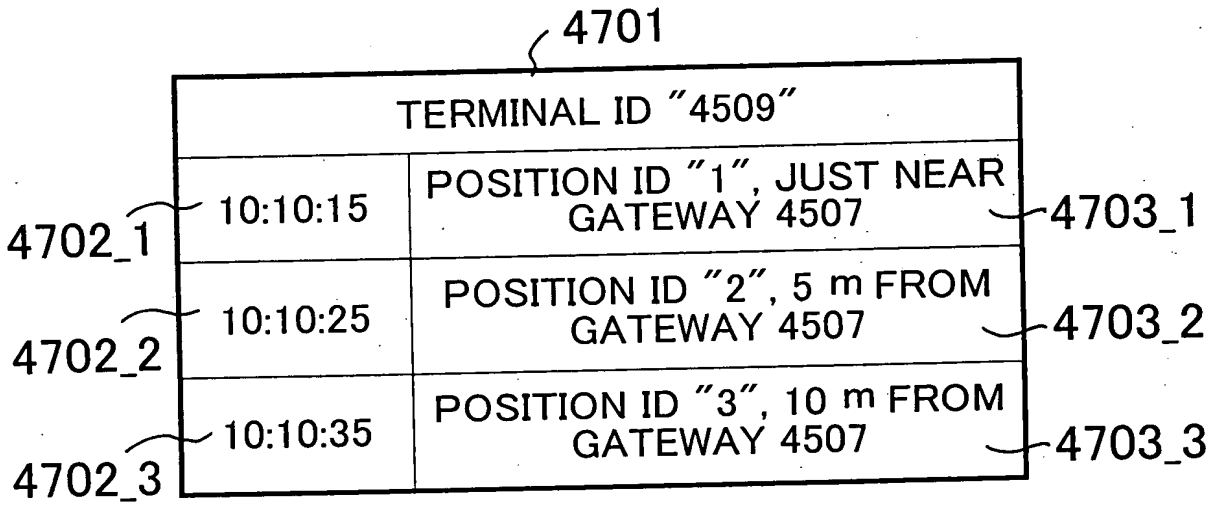

4701
TERMINAL ID "4509"
10:10:15
POSITION ID "1", JUST NEAR GATEWAY 4507
4702_1
4703_1
10:10:25
POSITION ID "2", 5 m FROM GATEWAY 4507
4702_2
4703_2
10:10:35
POSITION ID "3", 10 m FROM GATEWAY 4507
4702_3
4703_3

FIG.48

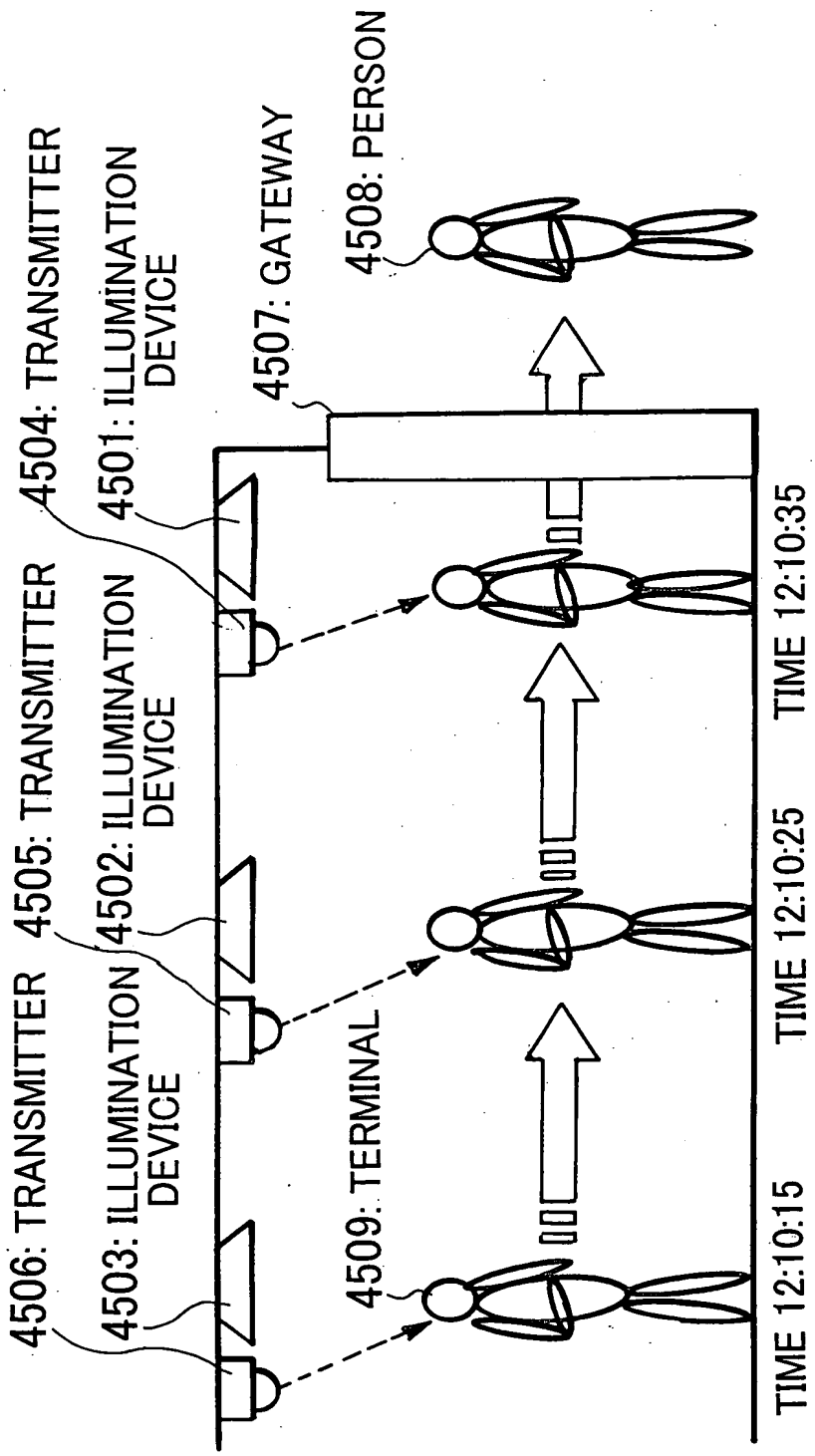

4506: TRANSMITTER
4503: ILLUMINATION DEVICE
4505: TRANSMITTER
4502: ILLUMINATION DEVICE
4504: TRANSMITTER
4501: ILLUMINATION DEVICE
4507: GATEWAY
4508: PERSON
4509: TERMINAL
TIME 12:10:15
TIME 12:10:25
TIME 12:10:35

FIG.49

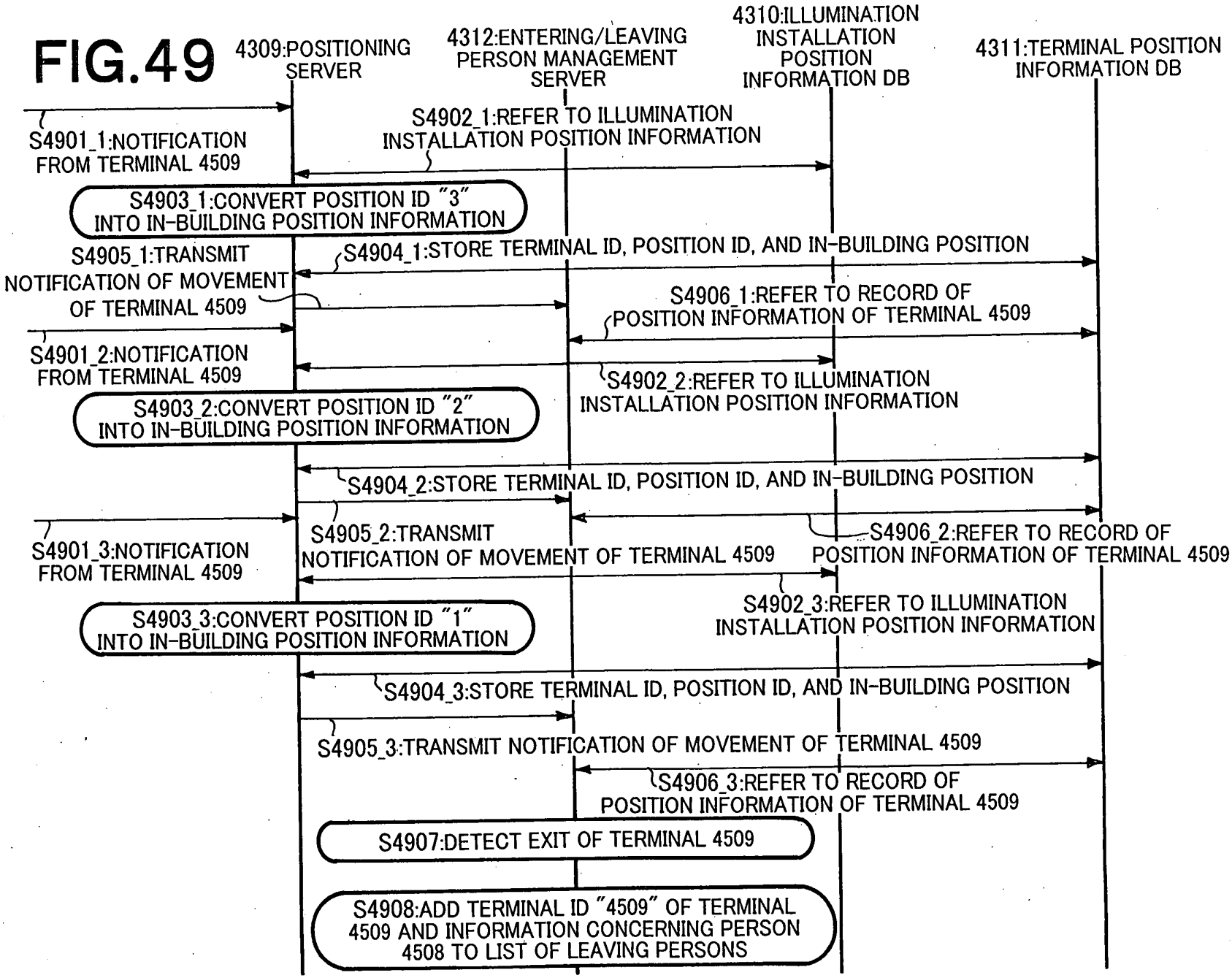

4309:POSITIONING SERVER
4312:ENTERING/LEAVING PERSON MANAGEMENT SERVER
4310:ILLUMINATION INSTALLATION POSITION INFORMATION DB
4311:TERMINAL POSITION INFORMATION DB
S4901_1:NOTIFICATION FROM TERMINAL 4509
S4902_1:REFER TO ILLUMINATION INSTALLATION POSITION INFORMATION
S4903_1:CONVERT POSITION ID "3" INTO IN-BUILDING POSITION INFORMATION
S4905_1:TRANSMIT NOTIFICATION OF MOVEMENT OF TERMINAL 4509
S4904_1:STORE TERMINAL ID, POSITION ID, AND IN-BUILDING POSITION
S4906_1:REFER TO RECORD OF POSITION INFORMATION OF TERMINAL 4509
S4901_2:NOTIFICATION FROM TERMINAL 4509
S4902_2:REFER TO ILLUMINATION INSTALLATION POSITION INFORMATION
S4903_2:CONVERT POSITION ID "2" INTO IN-BUILDING POSITION INFORMATION
S4904_2:STORE TERMINAL ID, POSITION ID, AND IN-BUILDING POSITION
S4901_3:NOTIFICATION FROM TERMINAL 4509
S4905_2:TRANSMIT NOTIFICATION OF MOVEMENT OF TERMINAL 4509
S4906_2:REFER TO RECORD OF POSITION INFORMATION OF TERMINAL 4509
S4902_3:REFER TO ILLUMINATION INSTALLATION POSITION INFORMATION
S4903_3:CONVERT POSITION ID "1" INTO IN-BUILDING POSITION INFORMATION
S4904_3:STORE TERMINAL ID, POSITION ID, AND IN-BUILDING POSITION
S4905_3:TRANSMIT NOTIFICATION OF MOVEMENT OF TERMINAL 4509
S4906_3:REFER TO RECORD OF POSITION INFORMATION OF TERMINAL 4509
S4907:DETECT EXIT OF TERMINAL 4509
S4908:ADD TERMINAL ID "4509" OF TERMINAL 4509 AND INFORMATION CONCERNING PERSON 4508 TO LIST OF LEAVING PERSONS

FIG.50

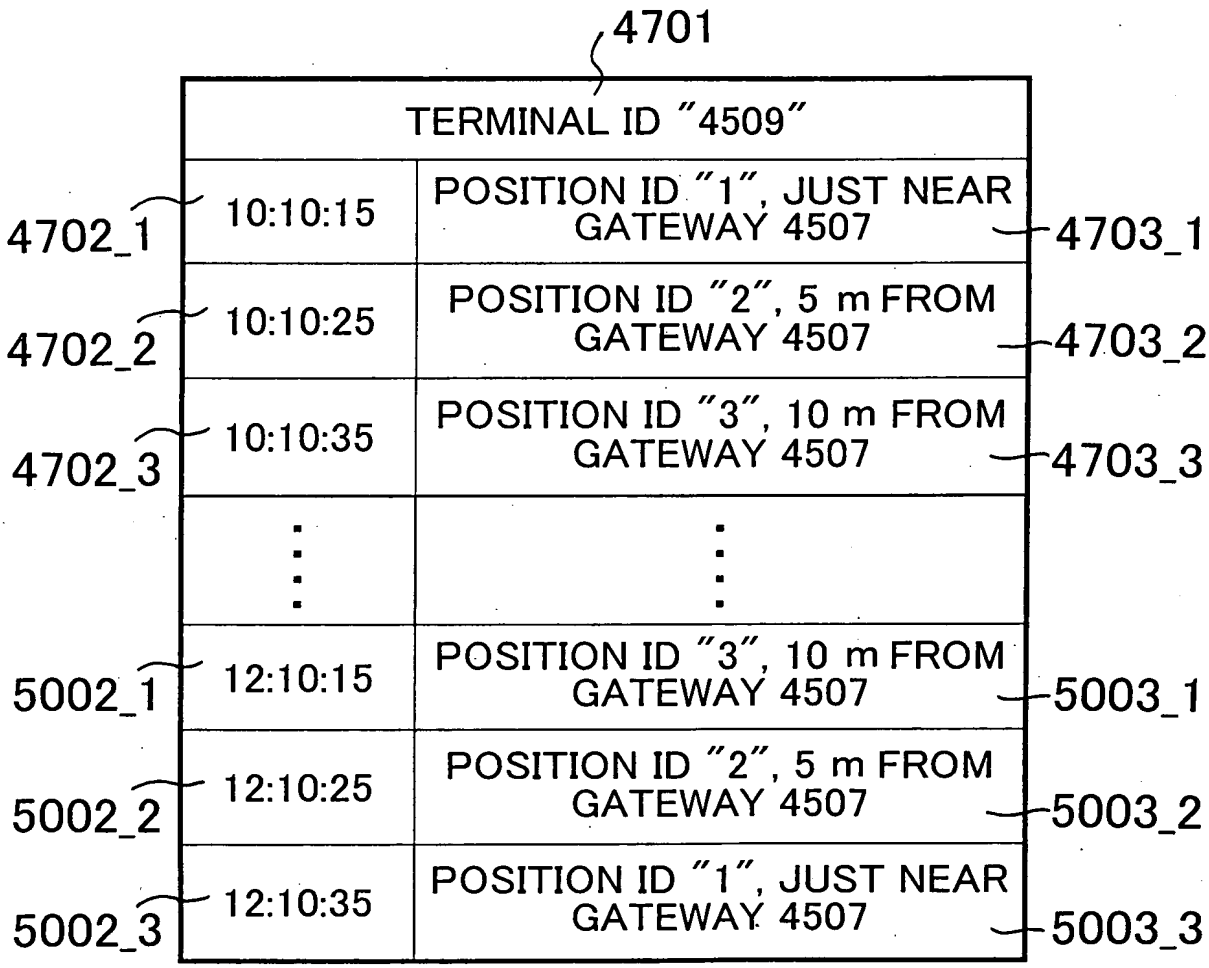

4701
TERMINAL ID "4509"
4702_1
10:10:15
POSITION ID "1", JUST NEAR GATEWAY 4507
4703_1
4702_2
10:10:25
POSITION ID "2", 5 m FROM GATEWAY 4507
4703_2
4702_3
10:10:35
POSITION ID "3", 10 m FROM GATEWAY 4507
4703_3
5002_1
12:10:15
POSITION ID "3", 10 m FROM GATEWAY 4507
5003_1
5002_2
12:10:25
POSITION ID "2", 5 m FROM GATEWAY 4507
5003_2
5002_3
12:10:35
POSITION ID "1", JUST NEAR GATEWAY 4507
5003_3

FIG.51

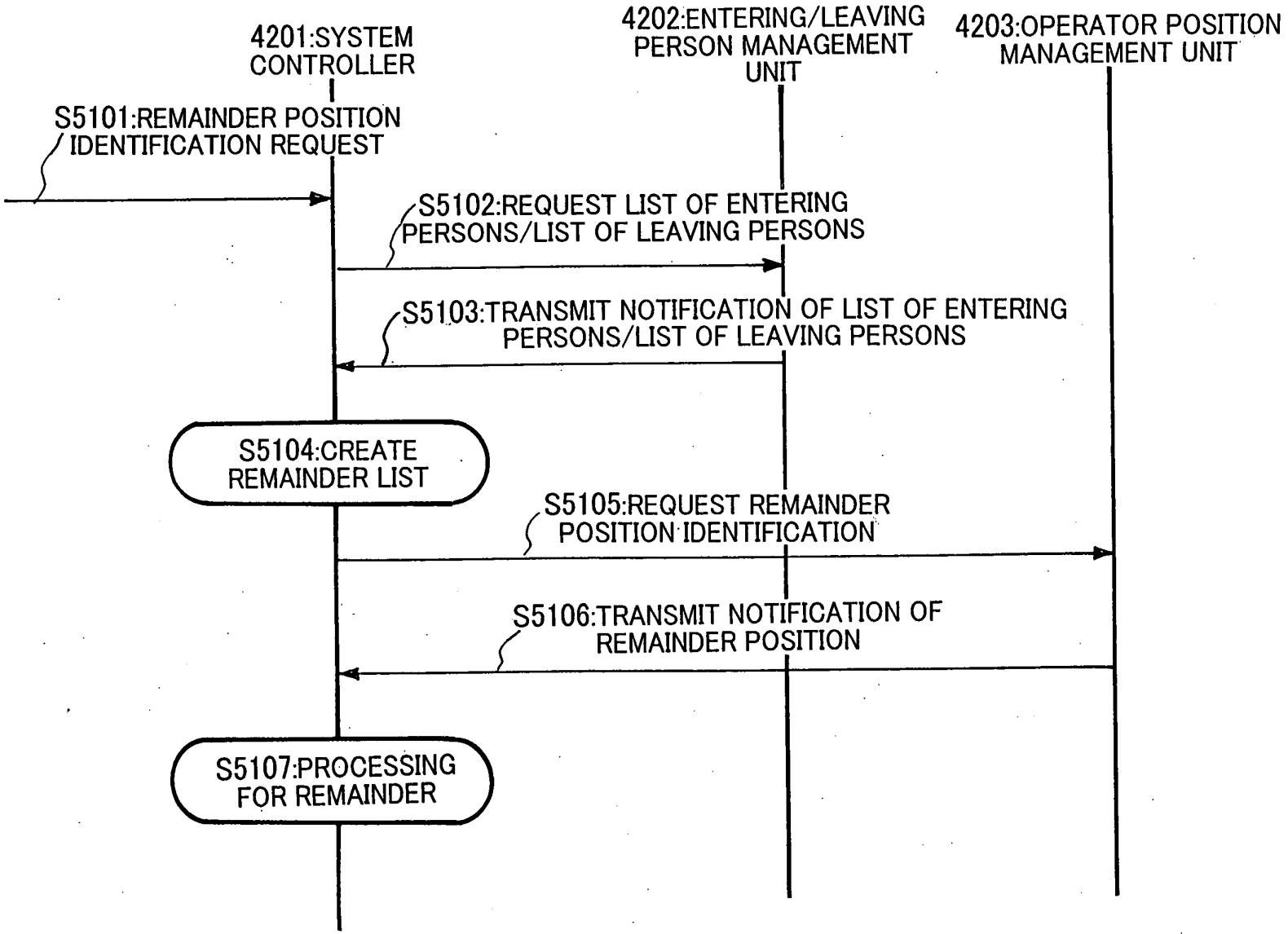

4201:SYSTEM CONTROLLER
4202:ENTERING/LEAVING PERSON MANAGEMENT UNIT
4203:OPERATOR POSITION MANAGEMENT UNIT
S5101:REMAINDER POSITION IDENTIFICATION REQUEST
S5102:REQUEST LIST OF ENTERING PERSONS/LIST OF LEAVING PERSONS
S5103:TRANSMIT NOTIFICATION OF LIST OF ENTERING PERSONS/LIST OF LEAVING PERSONS
S5104:CREATE REMAINDER LIST
S5105:REQUEST REMAINDER POSITION IDENTIFICATION
S5106:TRANSMIT NOTIFICATION OF REMAINDER POSITION
S5107:PROCESSING FOR REMAINDER

FIG.52

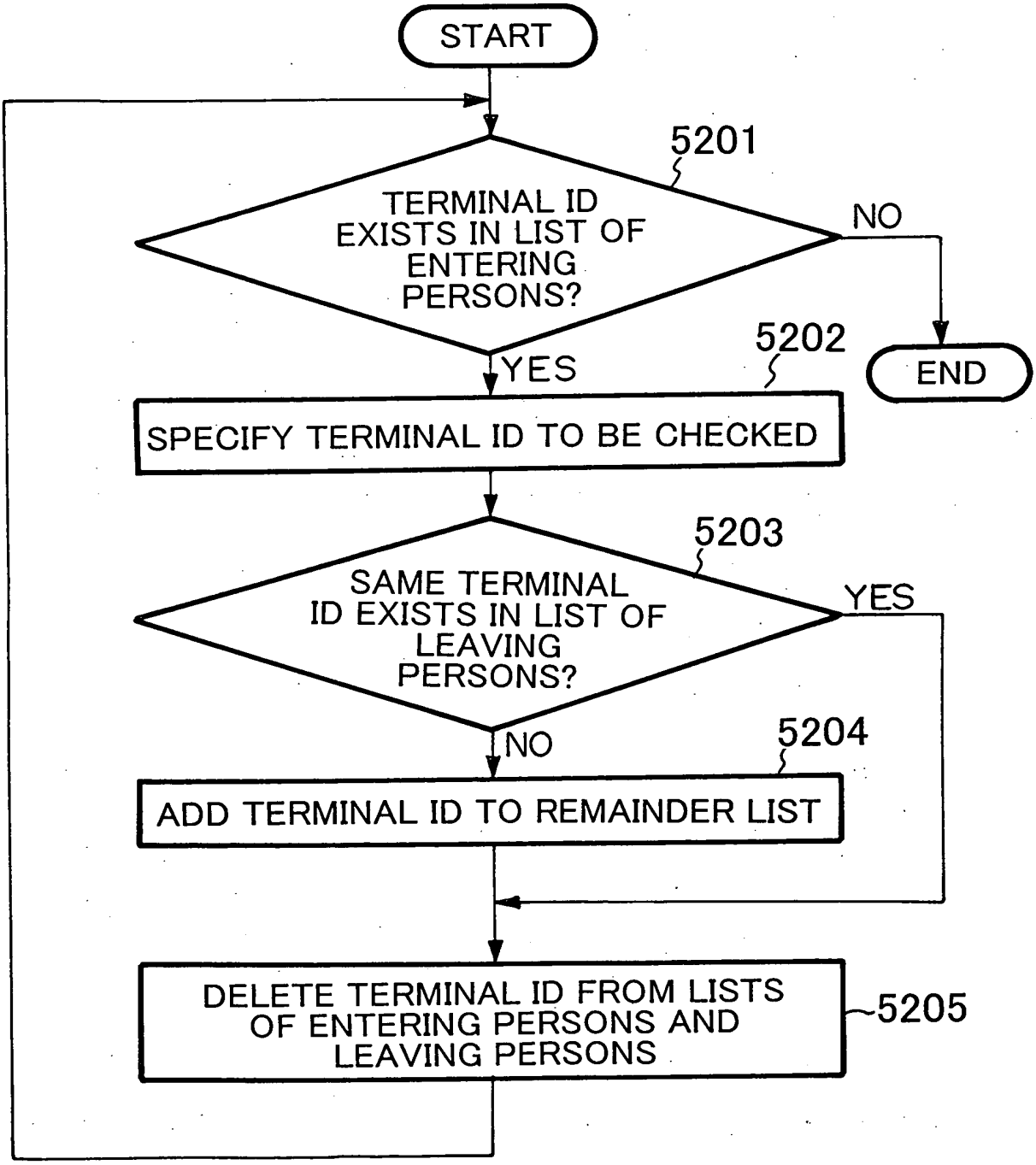

START
5201
TERMINAL ID EXISTS IN LIST OF ENTERING PERSONS?
NO
YES
5202
END
SPECIFY TERMINAL ID TO BE CHECKED
5203
SAME TERMINAL ID EXISTS IN LIST OF LEAVING PERSONS?
YES
NO
5204
ADD TERMINAL ID TO REMAINDER LIST
DELETE TERMINAL ID FROM LISTS OF ENTERING PERSONS AND LEAVING PERSONS
5205

FIG.53

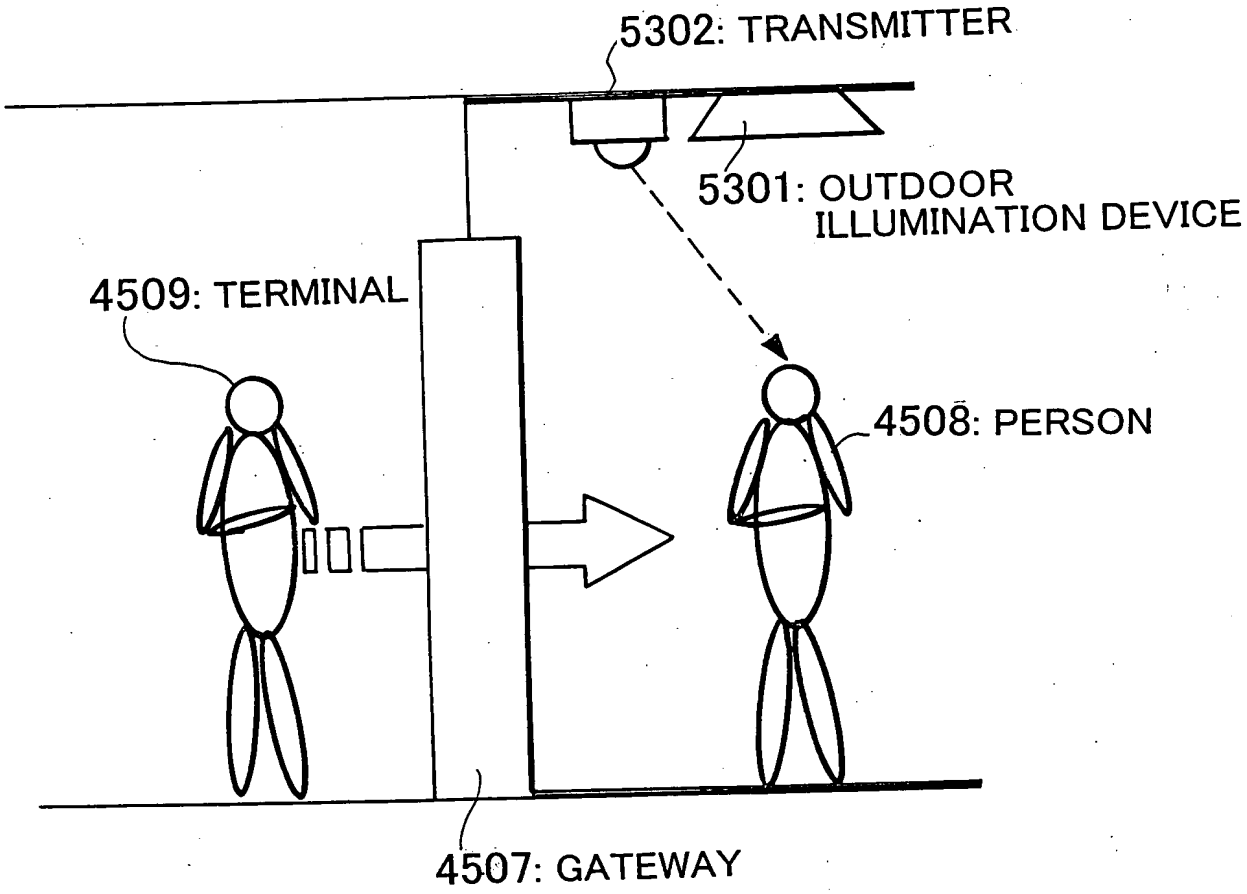
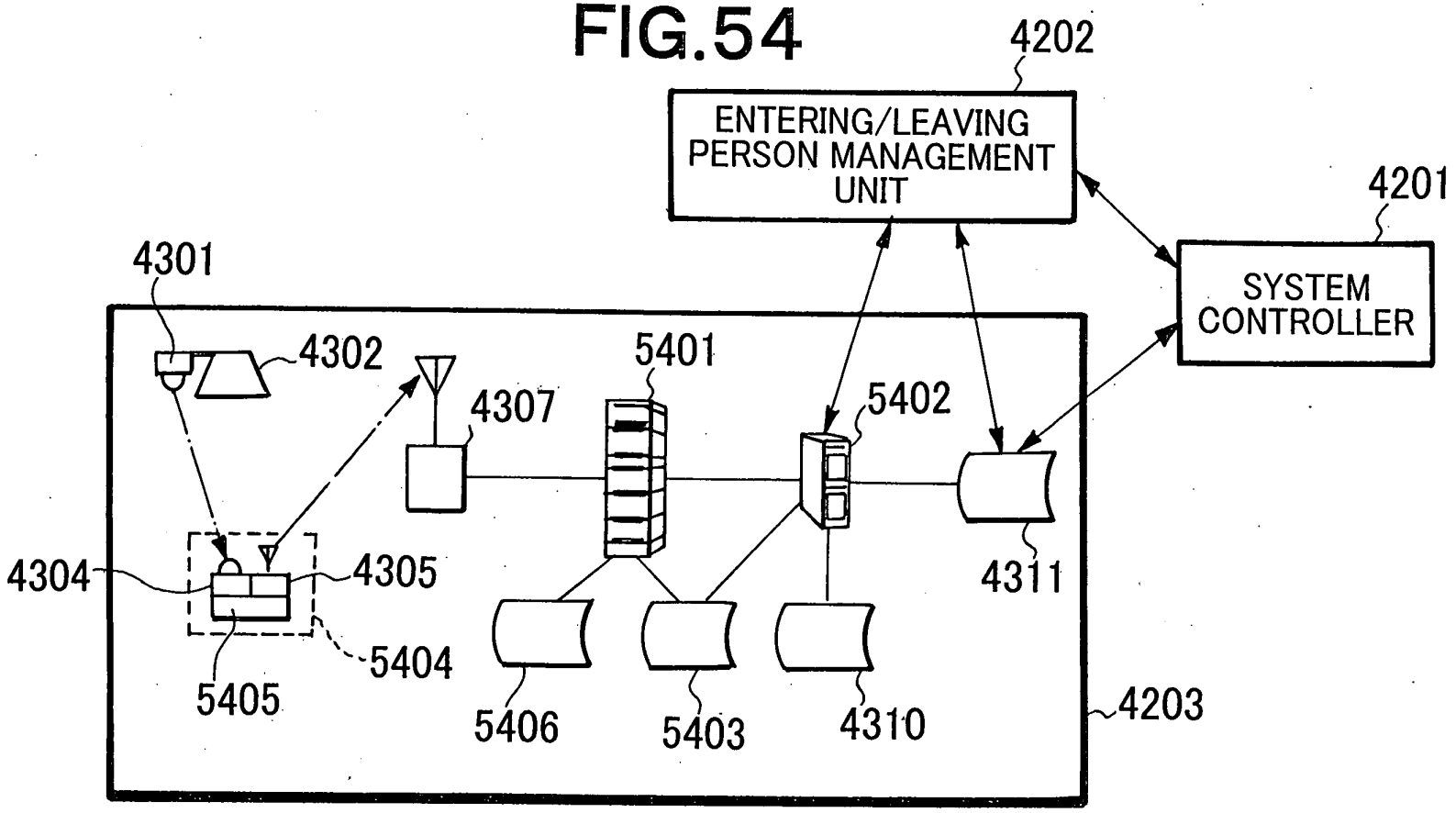

5302: TRANSMITTER
5301: OUTDOOR ILLUMINATION DEVICE
4509: TERMINAL
4508: PERSON
4507: GATEWAY

FIG.54



4203: OPERATOR POSITION MANAGEMENT UNIT
4301: TRANSMITTER
4302: ILLUMINATION DEVICE
4304: LIGHT SIGNAL DETECTION UNIT
4305: PHS TRANSMITTER
4307: PHS BASE STATION
4310: ILLUMINATION INSTALLATION POSITION INFORMATION DB
4311: TERMINAL POSITION INFORMATION DB
5401: SWITCHING SYSTEM
5402: POSITIONING SERVER
5403: PHS POSITION INFORMATION DB
5404: TERMINAL
5405: OPERATION CONTROLLER
5406: BASE STATION INSTALLATION POSITION DB

FIG.55

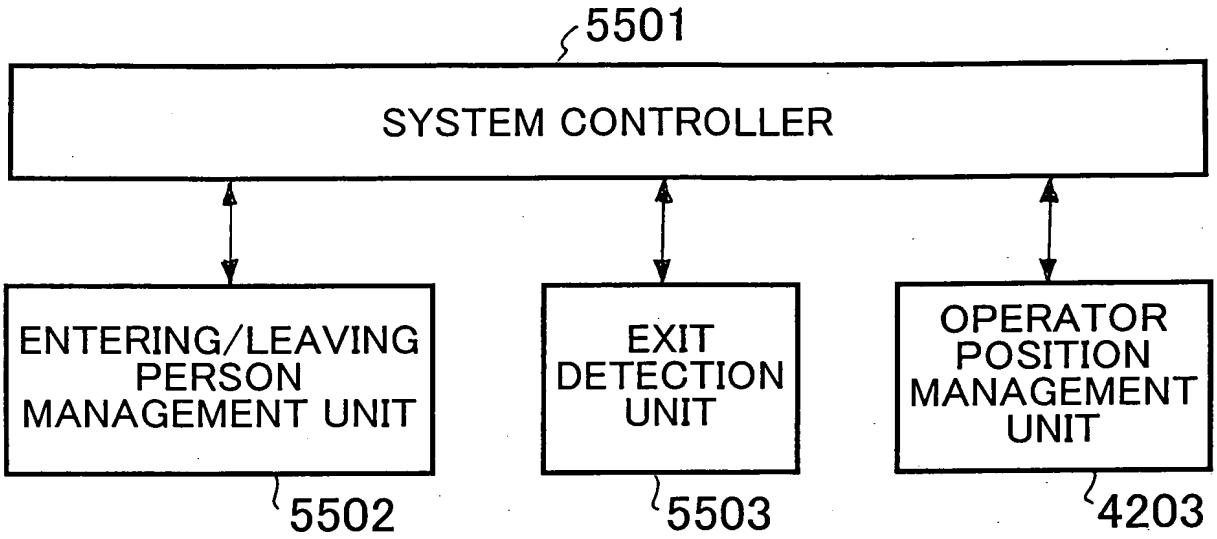

5501
SYSTEM CONTROLLER
ENTERING/LEAVING PERSON MANAGEMENT UNIT
EXIT DETECTION UNIT
OPERATOR POSITION MANAGEMENT UNIT
5502
5503
4203

FIG.56

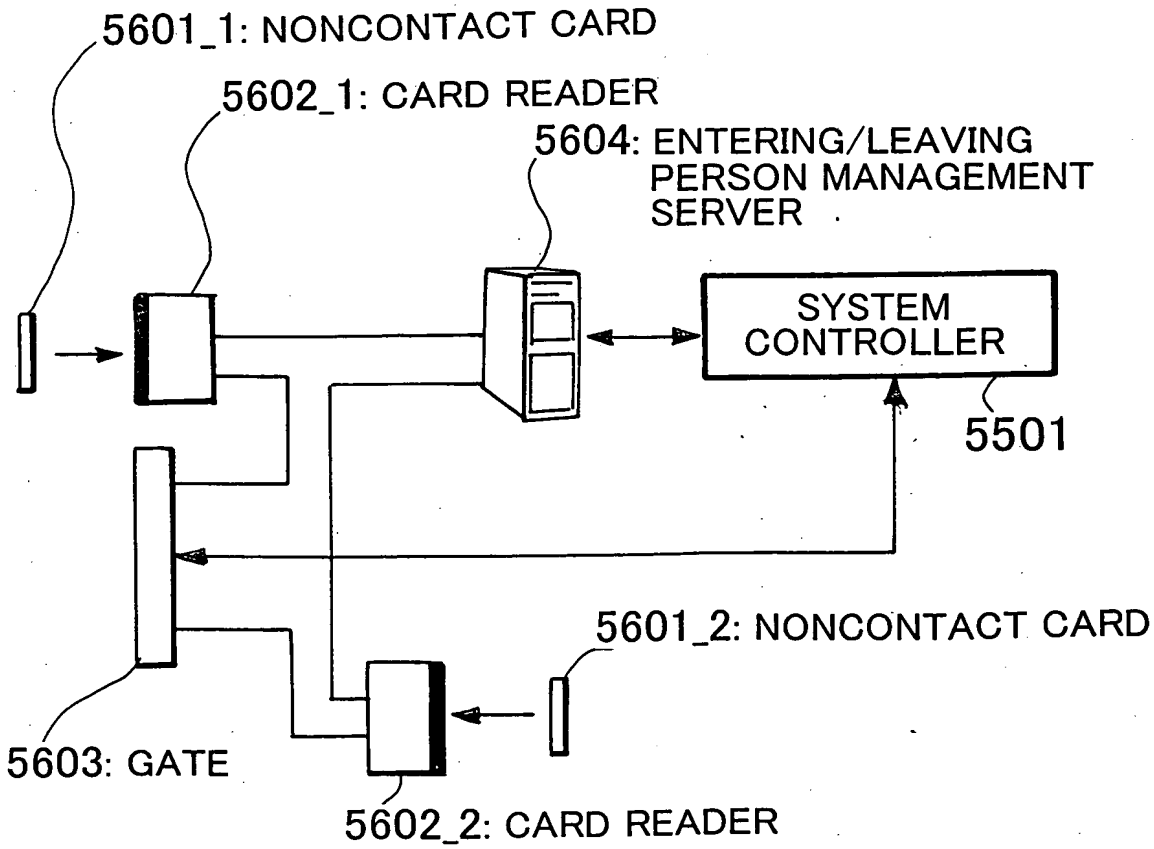
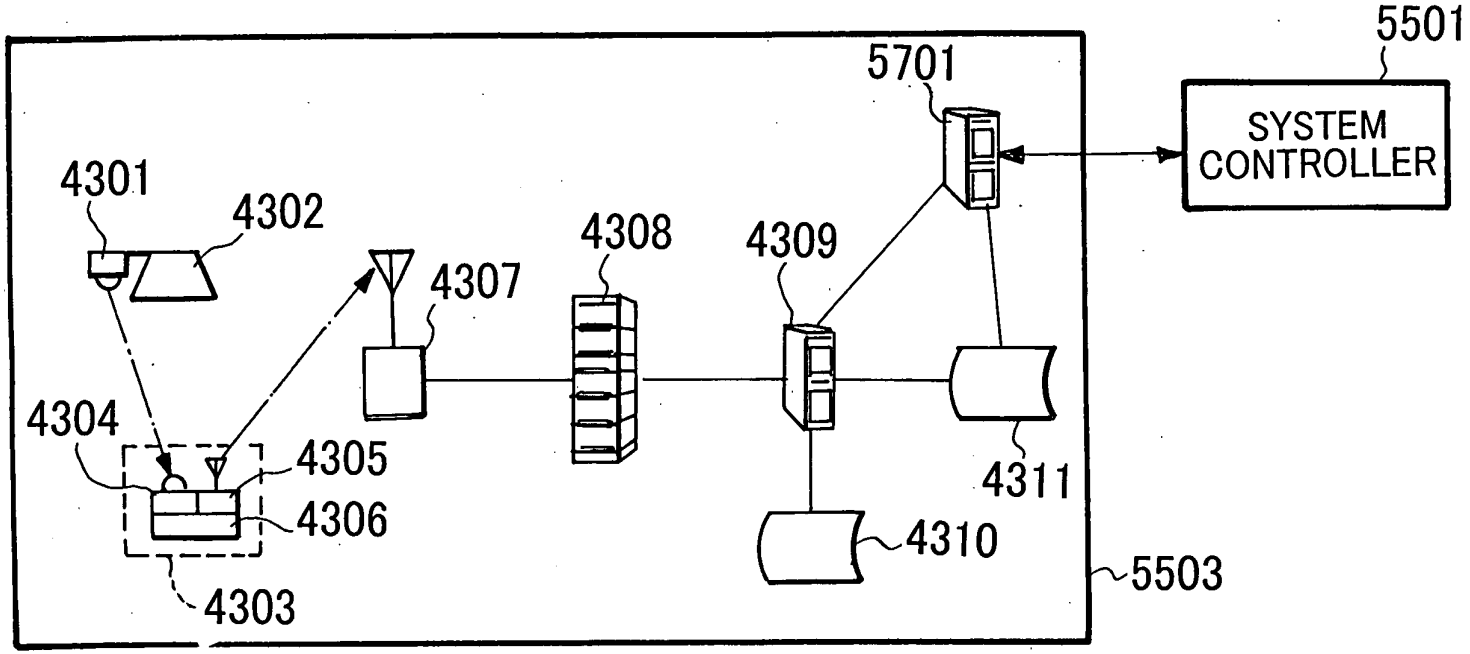

5601_1: NONCONTACT CARD
5602_1: CARD READER
5604: ENTERING/LEAVING PERSON MANAGEMENT SERVER
SYSTEM CONTROLLER
5501
5601_2: NONCONTACT CARD
5603: GATE
5602_2: CARD READER

FIG.57



4301: TRANSMITTER
4302: ILLUMINATION DEVICE
4303: TERMINAL
4304: LIGHT SIGNAL DETECTION UNIT
4305: PHS TRANSMITTER
4306: OPERATION CONTROLLER
4307: PHS BASE STATION
4308: SWITCHING SYSTEM
4309: POSITIONING SERVER
4310: ILLUMINATION INSTALLATION POSITION INFORMATION DB
4311: TERMINAL POSITION INFORMATION DB
5503: EXIT DETECTION UNIT
5701: EXIT MANAGEMENT SERVER

FIG.58

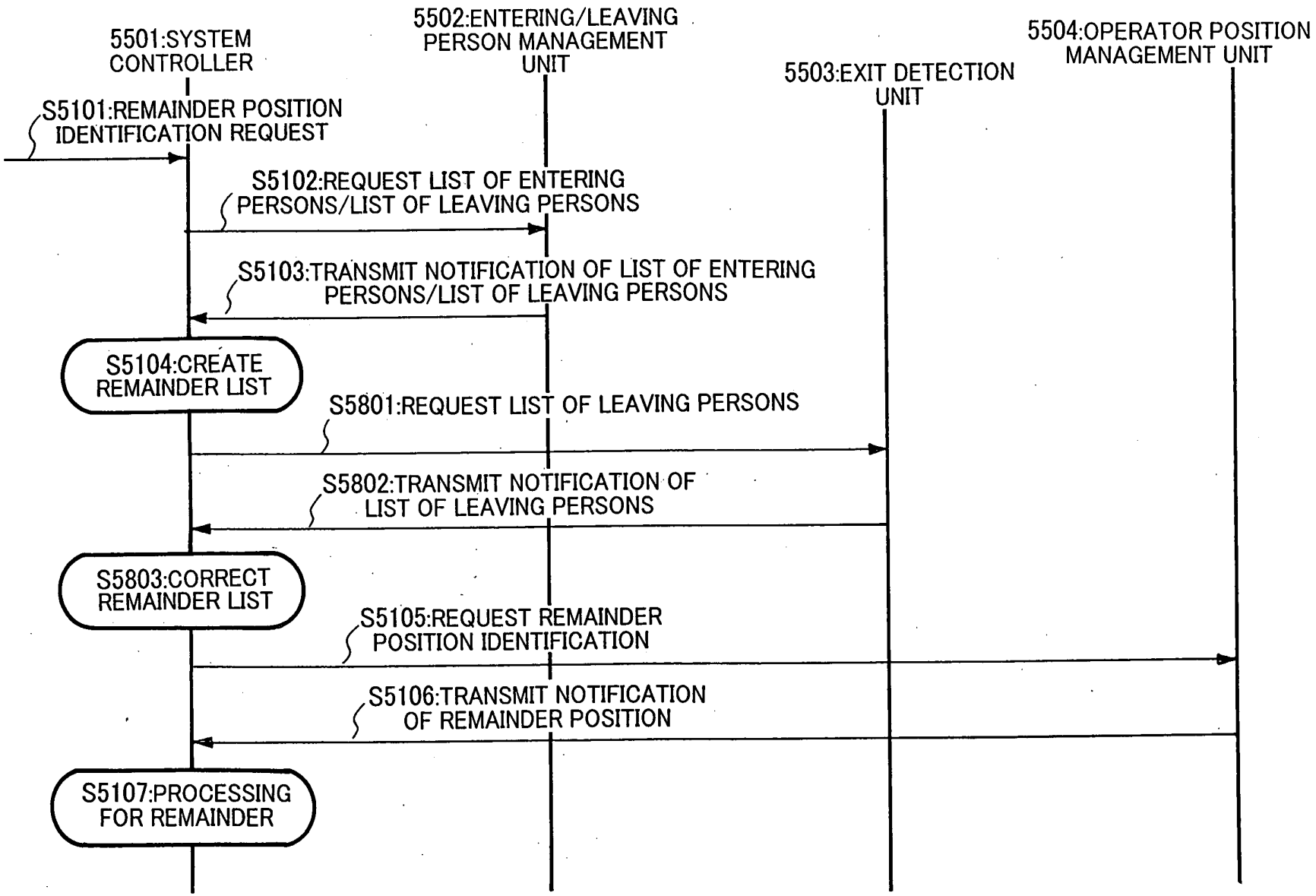

5501:SYSTEM CONTROLLER
5502:ENTERING/LEAVING PERSON MANAGEMENT UNIT
5503:EXIT DETECTION UNIT
5504:OPERATOR POSITION MANAGEMENT UNIT
S5101:REMAINDER POSITION IDENTIFICATION REQUEST
S5102:REQUEST LIST OF ENTERING PERSONS/LIST OF LEAVING PERSONS
S5103:TRANSMIT NOTIFICATION OF LIST OF ENTERING PERSONS/LIST OF LEAVING PERSONS
S5104:CREATE REMAINDER LIST
S5801:REQUEST LIST OF LEAVING PERSONS
S5802:TRANSMIT NOTIFICATION OF LIST OF LEAVING PERSONS
S5803:CORRECT REMAINDER LIST
S5105:REQUEST REMAINDER POSITION IDENTIFICATION
S5106:TRANSMIT NOTIFICATION OF REMAINDER POSITION
S5107:PROCESSING FOR REMAINDER

FIG.59

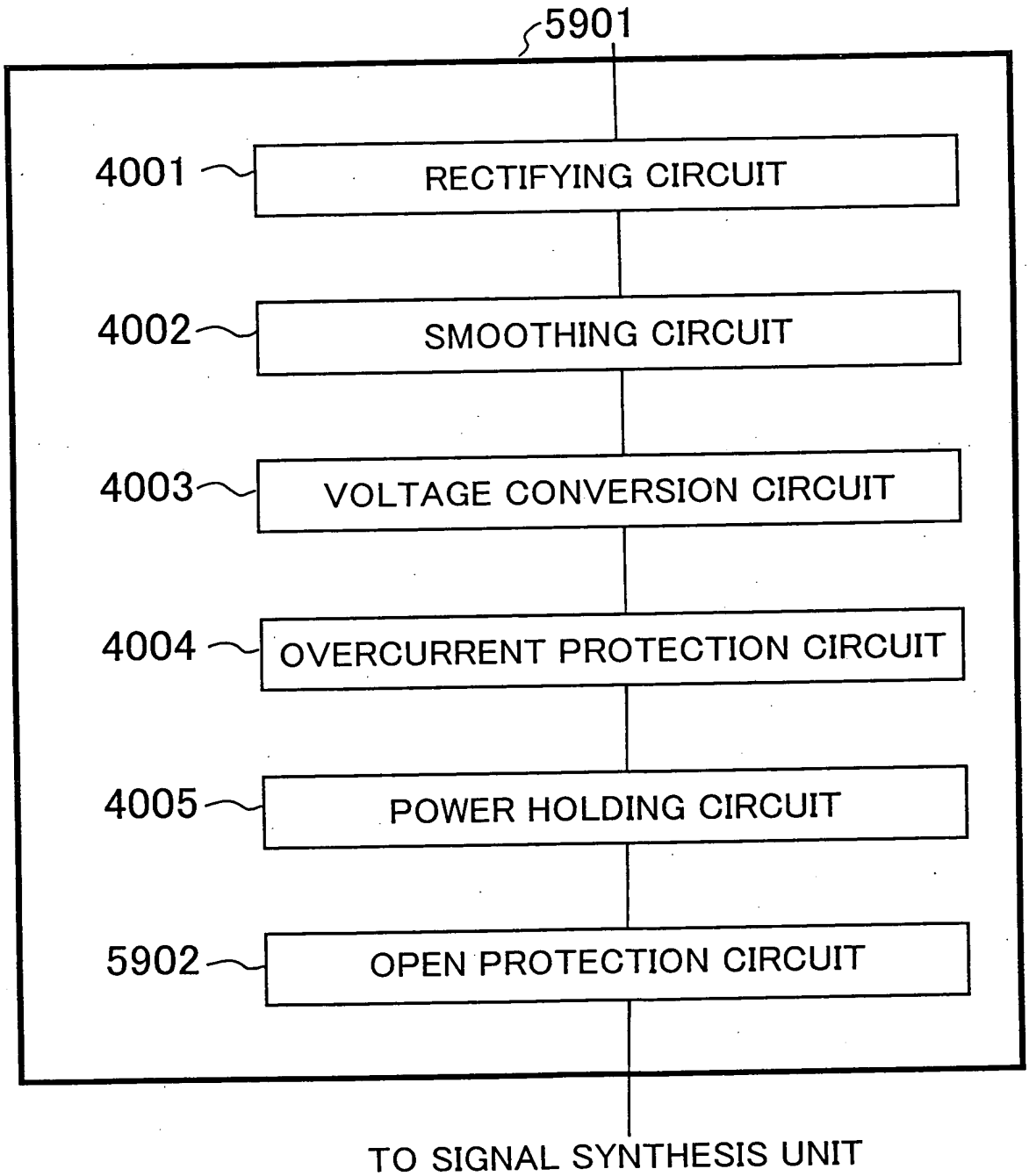

5901
4001
RECTIFYING CIRCUIT
4002
SMOOTHING CIRCUIT
4003
VOLTAGE CONVERSION CIRCUIT
4004
OVERCURRENT PROTECTION CIRCUIT
4005
POWER HOLDING CIRCUIT
5902
OPEN PROTECTION CIRCUIT
TO SIGNAL SYNTHESIS UNIT

FIG.60

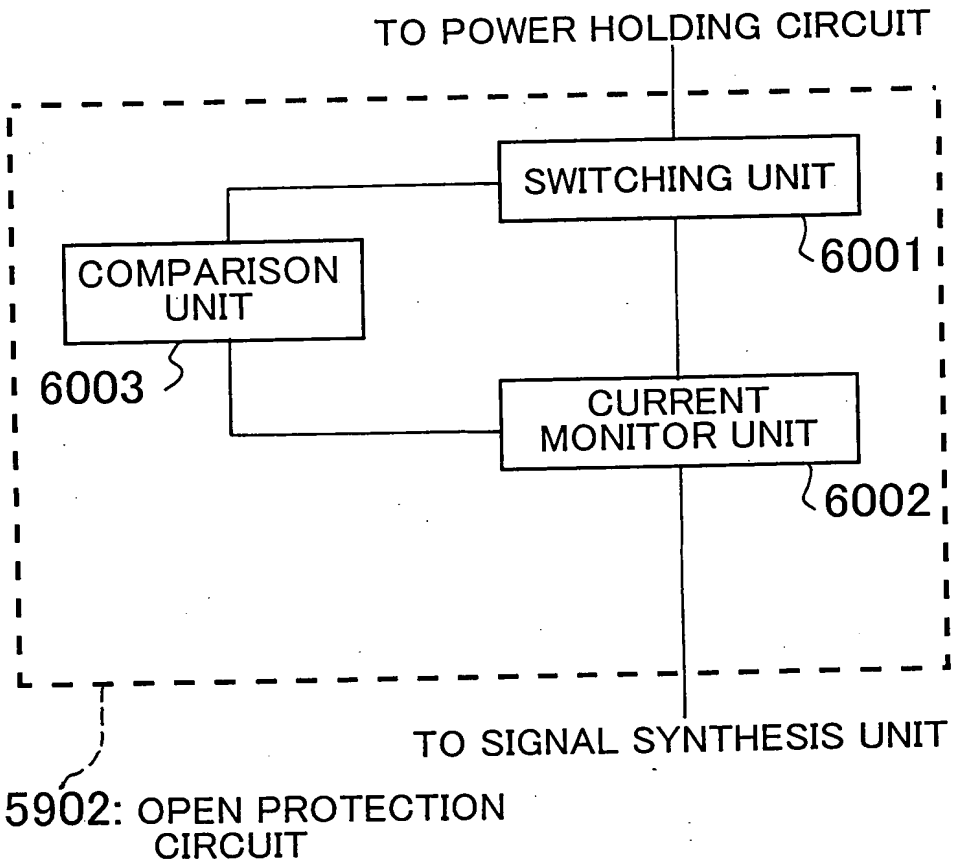

TO POWER HOLDING CIRCUIT
SWITCHING UNIT
6001
COMPARISON UNIT
6003
CURRENT MONITOR UNIT
6002
TO SIGNAL SYNTHESIS UNIT
5902: OPEN PROTECTION CIRCUIT

FIG.61

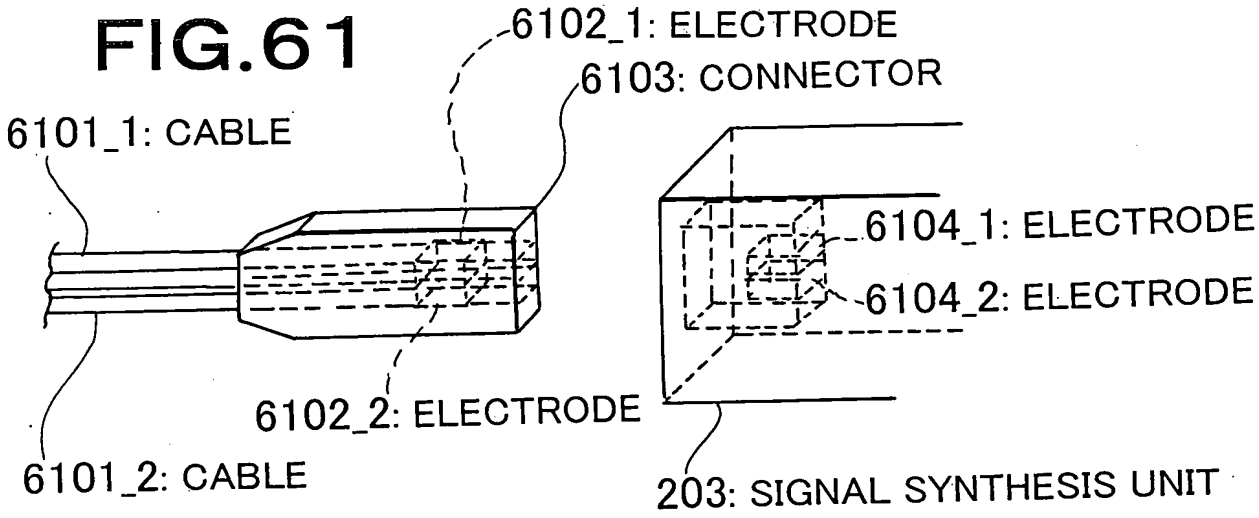

6102_1: ELECTRODE
6103: CONNECTOR
6101_1: CABLE
6104_1: ELECTRODE
6104_2: ELECTRODE
6102_2: ELECTRODE
6101_2: CABLE
203: SIGNAL SYNTHESIS UNIT

FIG.62

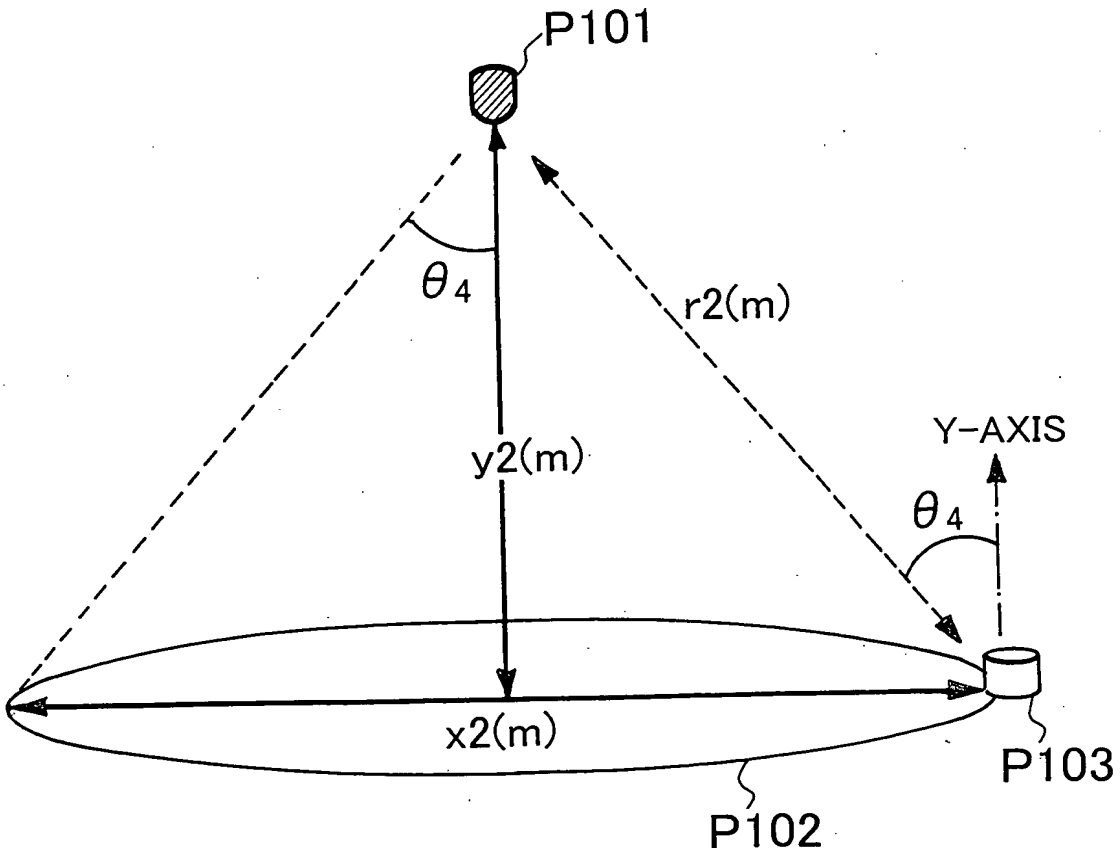

P101
θ4
r2(m)
y2(m)
Y-AXIS
θ4
x2(m)
P103
P102

FIG.63

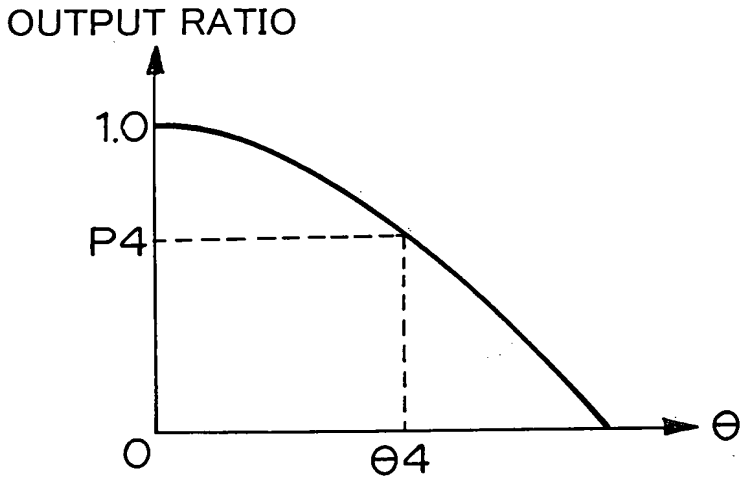


FIG.64

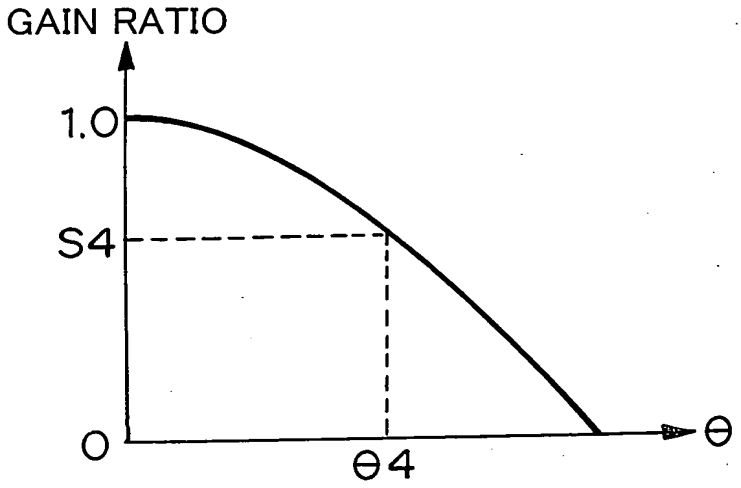


FIG.65

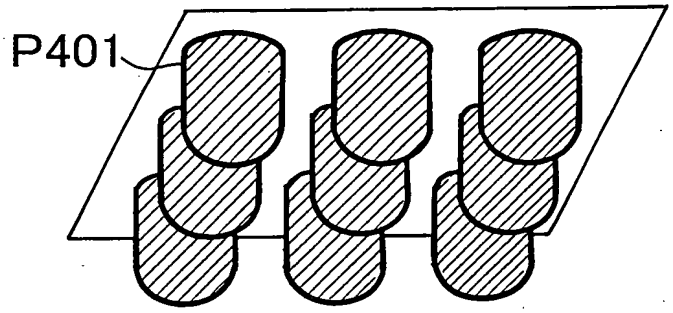


FIG.66

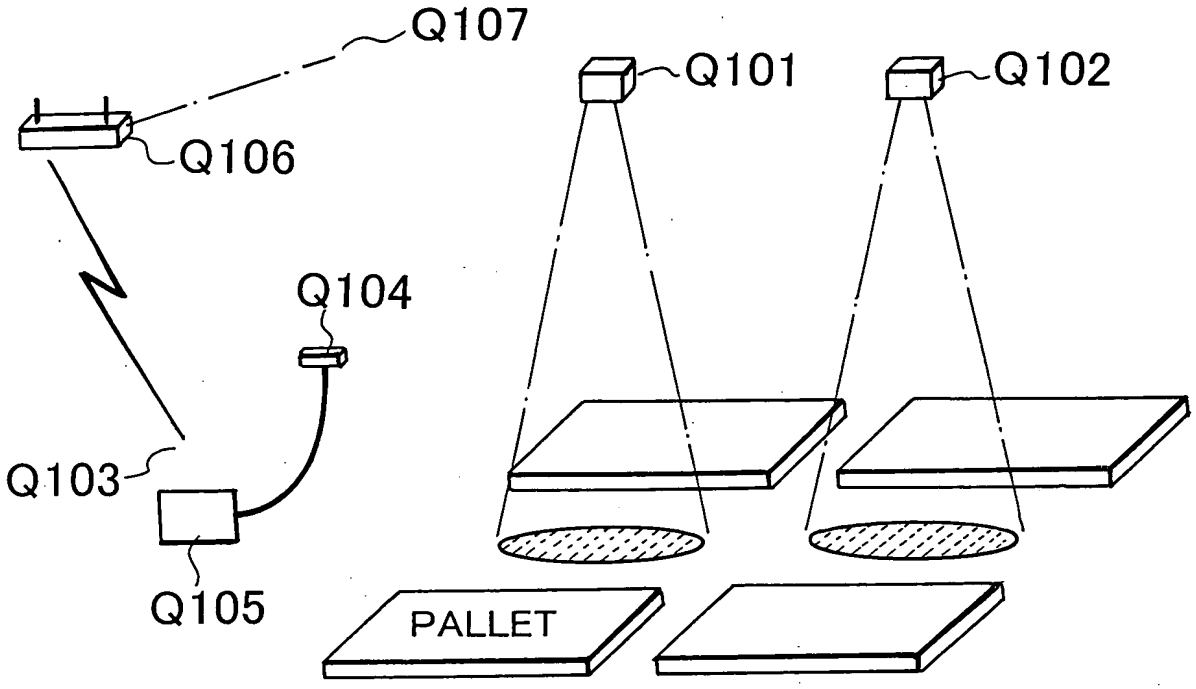

Q107
Q101
Q102
Q106
Q104
Q103
Q105
PALLET

FIG.67

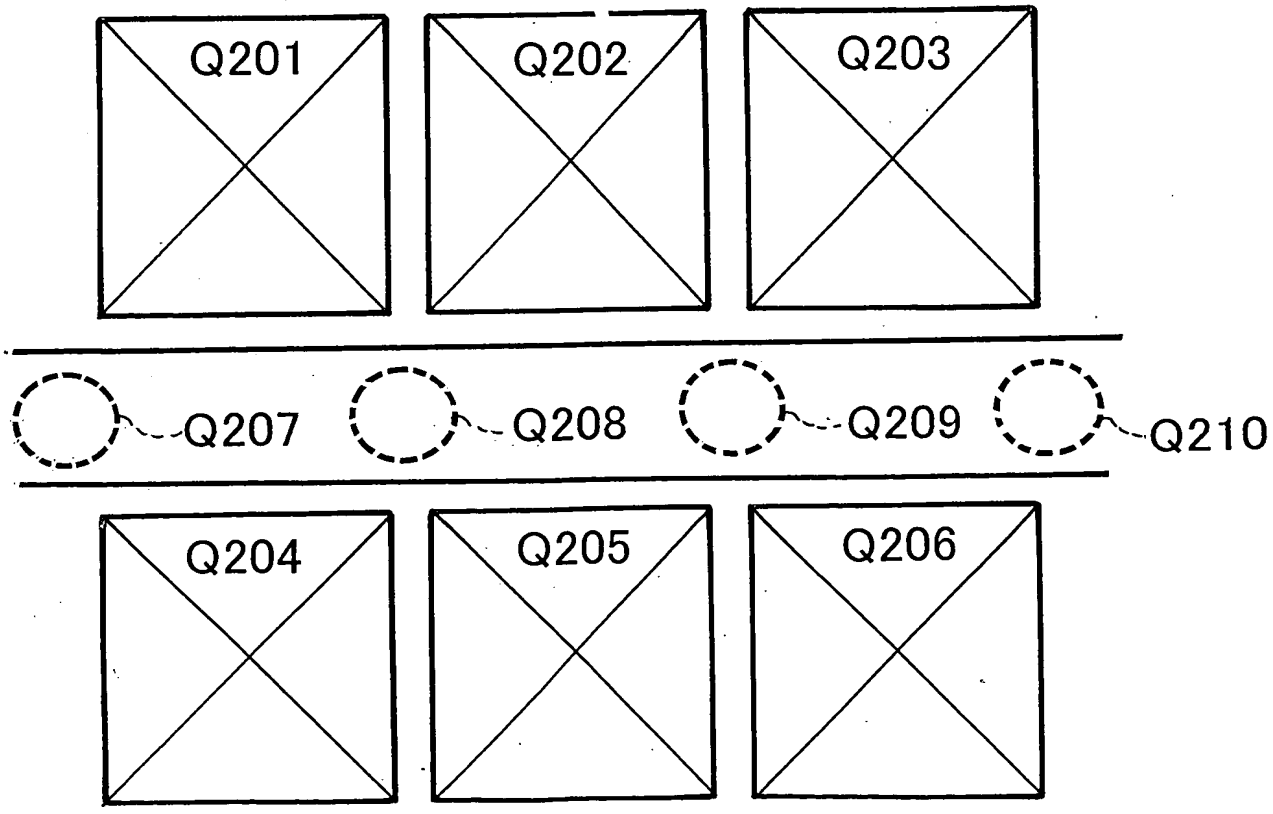

Q201
Q202
Q203
Q207
Q208
Q209
Q210
Q204
Q205
Q206

FIG.68

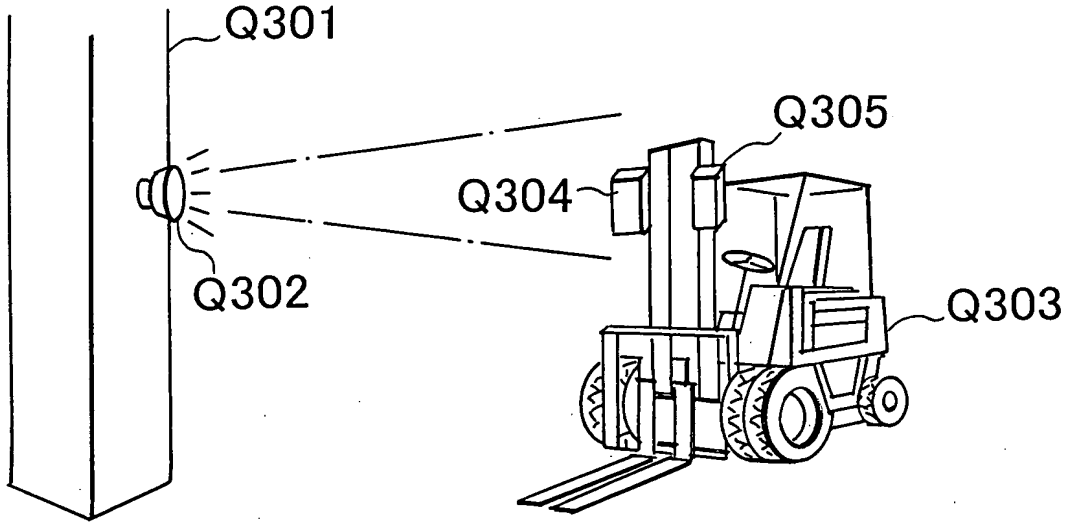

Q301
Q305
Q304
Q302
Q303

FIG.69

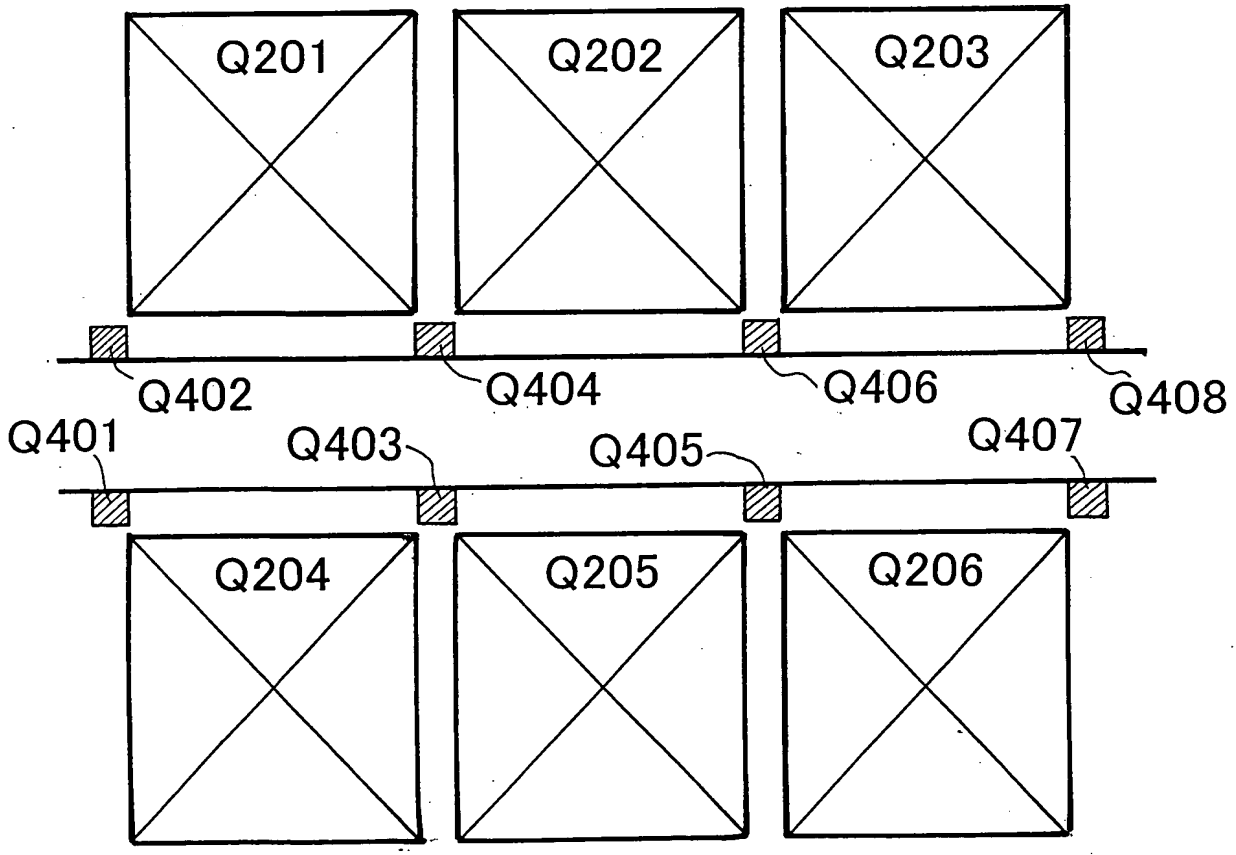

Q201
Q202
Q203
Q402
Q404
Q406
Q408
Q401
Q403
Q405
Q407
Q204
Q205
Q206

FIG.70

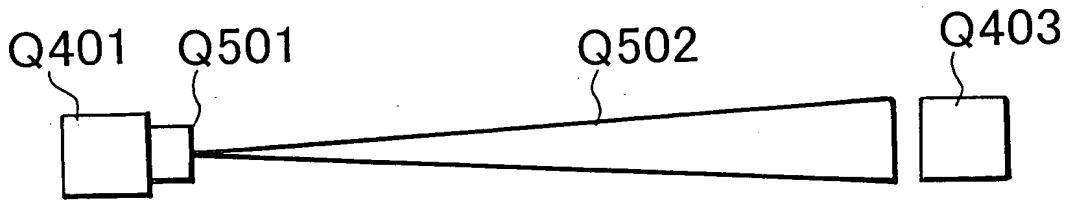


FIG.71

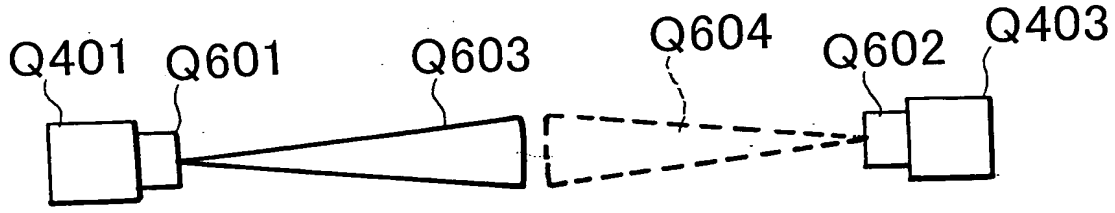


FIG.72

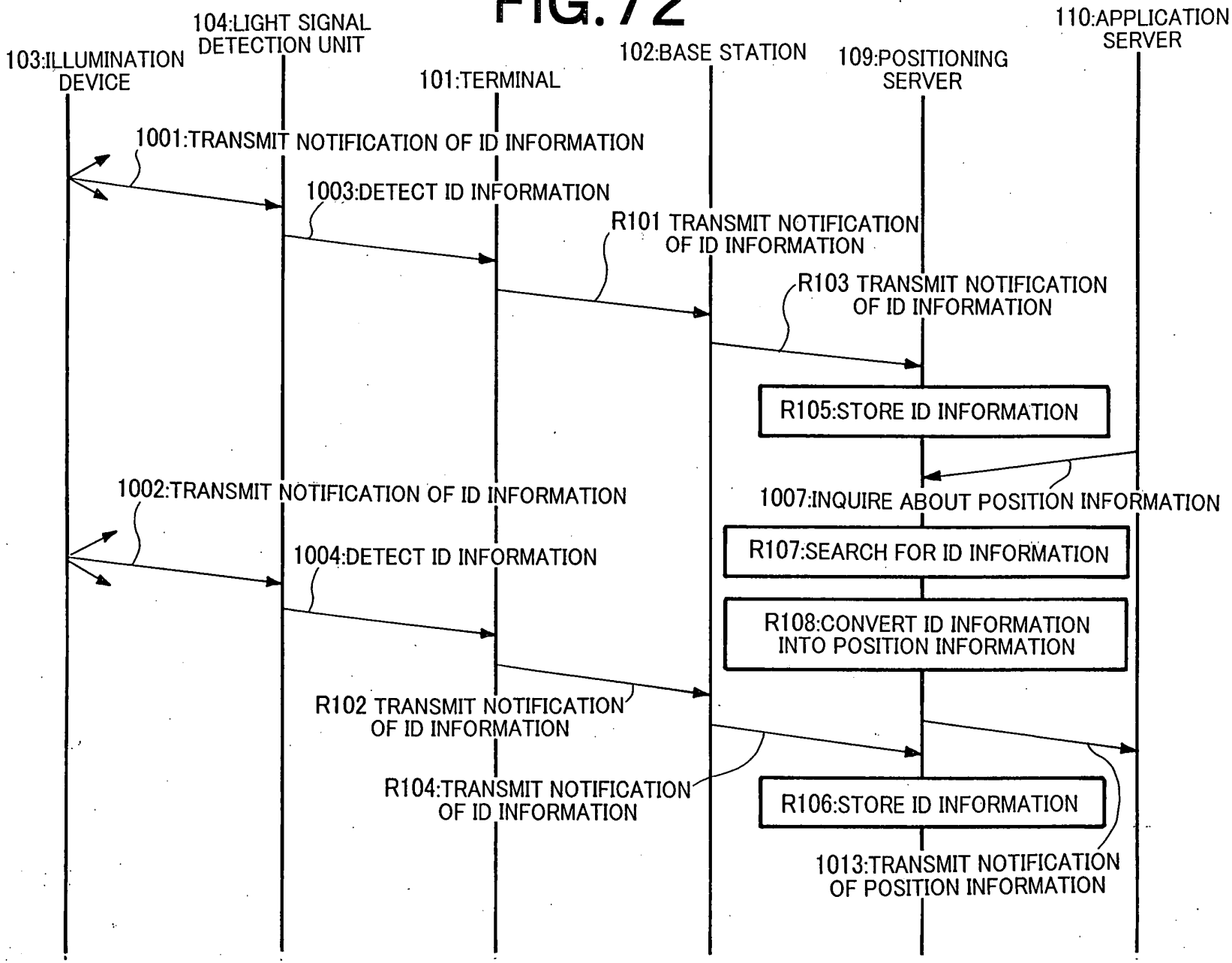

103:ILLUMINATION DEVICE
104:LIGHT SIGNAL DETECTION UNIT
101:TERMINAL
102:BASE STATION
109:POSITIONING SERVER
110:APPLICATION SERVER
1001:TRANSMIT NOTIFICATION OF ID INFORMATION
1003:DETECT ID INFORMATION
R101 TRANSMIT NOTIFICATION OF ID INFORMATION
R103 TRANSMIT NOTIFICATION OF ID INFORMATION
R105:STORE ID INFORMATION
1002:TRANSMIT NOTIFICATION OF ID INFORMATION
1007:INQUIRE ABOUT POSITION INFORMATION
1004:DETECT ID INFORMATION
R107:SEARCH FOR ID INFORMATION
R108:CONVERT ID INFORMATION INTO POSITION INFORMATION
R102 TRANSMIT NOTIFICATION OF ID INFORMATION
R104:TRANSMIT NOTIFICATION OF ID INFORMATION
R106:STORE ID INFORMATION
1013:TRANSMIT NOTIFICATION OF POSITION INFORMATION

FIG.73

1301 TERMINAL ID	1302 UNIQUE INFORMATION	1303 RECEPTION TIME
ID 1	ILLUMINATION ID 10	2003/10/01 15:10:53
ID 1	ILLUMINATION ID 10	2003/10/01 15:10:57
ID 1	ILLUMINATION ID 03	2003/10/01 15:11:30
ID 2	ILLUMINATION ID 06	2003/10/01 15:12:10
ID 3	ILLUMINATION ID 07	2003/10/01 15:12:10
⋮	⋮	⋮